

EASTERN REGIONALISM AND INDIAN IDENTITY:  
A CASE STUDY OF CHARLES CORREA'S 'INTER-UNIVERSITY CENTER  
FOR ASTRONOMY AND ASTROPHYSICS' & RAJ REWAL'S 'CENTRAL  
INSTITUTE OF EDUCATIONAL TECHNOLOGY'

by

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B. Arch., Sir J. J. College of Architecture,  
University of Bombay, India, 1995

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A THESIS

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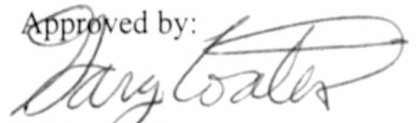
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## ABSTRACT

This thesis is a study of the practice of regionalism in architecture with special focus on India. Because of the nearly 200 years of colonial rule it is widely believed that contemporary architecture in India has lost a sense of regional and national identity. Attempts to regain this lost identity have been undertaken by a number of Indian architects during the last few decades including Charles Correa and Raj Rewal. This thesis to examines the work of these two architects to identify how they are regional within their own contexts and whether they contribute toward the formulation of a nationalist “Indian” identity today. The two buildings selected are Correa’s ‘Inter-University Centre for Astronomy and Astrophysics’ and Rewal’s ‘Central Institute of Educational Technology.’

A review of literature on architectural regionalism suggests that a distinction must be made between the aims and methods of regional practice in the East and the West. Suha Ozkan and Robert Powell have written a *Taxonomy of Regionalism* classifying the existing trends of regional architectural practice in the East. The Western perspective is best represented by the theory of *Critical Regionalism* put forward by Kenneth Frampton. For purposes of this thesis, Ozkan and Powell’s *Taxonomy* is extended to accommodate this Western perspective by including within it Frampton’s *Critical Regionalism*. This *Revised Taxonomy of Regionalism* is used as a conceptual framework to evaluate the buildings by Correa and Rewal.

It is observed that the two buildings are indeed representative of regional practice in contemporary Indian architecture, displaying both commonalities and differences. The differences between the two architects' approaches are seen to relate to the two basic philosophies of Rationalism and Empiricism in architecture. The commonalities, on the other hand, are identified as being particularly significant as they have the potential of forming the basis of a school of thought for achieving an appropriate contemporary nationalist "Indian" architectural identity. Following a critique of the two buildings, an evaluation of the conceptual framework establishes the potentials and limitations of the *Revised Taxonomy*. It is concluded that the *Revised Taxonomy of Regionalism* has the potential for future application in similar research ventures. To consolidate and reinforce the findings in this thesis, more research needs to be done. Some possible future directions are, therefore, suggested.

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Fig. 9.7 (p.32) from *Architecture + Design: A Journal for the Indian Architect*, Jan-Feb.1995. New Delhi: Media Transasia (I) Pvt. Ltd.

All remaining images photographed by this author on site.

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Much of the information used in this research has been obtained from my visit to India in the summer of 1997. The primary sources of information about the two architects I studied were the personal meetings that I had with them. Mr. Charles Correa spent more than an hour and a half in his office explaining his thoughts to me. The conversation that I had with him was more than informative, it was stimulating. Mr. Raj Rewal not only put forth his thoughts to me during our conversation, but also gave me complimentary copies of some published explications of his views and directed me to sources which he thought were closer in their interpretation to his

thoughts than other publications. The meetings with these pioneers of Indian architecture was perhaps the most enriching experience that I had throughout the course of this research. I thank them both for the knowledge and inspiration that I received from them.

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*To my parents*

24

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## CHAPTER I

### ARCHITECTURAL IDENTITY IN INDIA: A CASE FOR REGIONALISM

This research is a contemplation on the issue of architectural identity in contemporary India. It is observed that the colonial rule of more than two hundred years diluted the indigenous architectural evolution of India through the imposition of British concepts about architecture. Following independence in 1947, architecture in India seemed to be bereft of an intrinsic sense of identity. Pre-colonial architecture did not seem socially and culturally valid anymore, and the colonial era could not be drawn upon since it was considered an unwelcome intrusion in the cultural and architectural continuity of India. Thus, it seemed necessary to make a fresh beginning reflecting the present overall reality and one that would have potential for future growth.

Over the past several decades, a number of architects have contemplated and striven to regain what was once a unique identity in the pre-colonial era. Among these pioneers are Charles Correa from Mumbai (formerly Bombay) and Raj Rewal from New Delhi. It is the work of these two architects that this research examines. The intention is to identify how the works of these two architects display regional characteristics and integrate regional and global impulses to create a contemporary Indian architecture. There is also the concern about the differences and similarities displayed by the two architects' works and what these differences and similarities mean for the future of Indian architecture.



One building designed by each architect has been selected for study. The architects were asked by this researcher during personal conversations to identify one building which may deserve to be studied from the point of view mentioned above. While Correa declined to comment, Rewal suggested a couple of his buildings, and this researcher selected the one to be studied. A recent building of similar function designed by Correa was then selected to provide a comparable base. The two buildings are “The Inter-University Centre for Astronomy and Astrophysics” (IUCAA) designed by Correa in Pune, India, and “The Central Institute for Educational Technology” (CIET) designed by Rewal in New Delhi.

The IUCAA is a research facility for doctoral and post-doctoral students in astronomy and astrophysics. The CIET, on the other hand, functions as a facility for the development of educational tools for children all over the country to be used by the mass media. Both buildings are relatively recent. While the IUCAA was completed in 1992, the CIET was completed in 1990.

The two buildings have been analyzed within a conceptual framework created by this author on the basis of published works on architectural regionalism by three architectural theoreticians. These thoughts of the three theoreticians, viz. Suha Ozkan and Robert Powell (as a team) and Kenneth Frampton, can be seen to represent points of view about regional architecture prevalent in the East and the West respectively. Additional insights into the differing perspectives of the East and west are gained from a review of the proceedings of two conferences held at around the same time.

The conference in the East was held in Dhaka, the capital of Bangladesh, in 1985, and was titled *Regionalism in Architecture*<sup>1</sup>. It was the second conference in the series *Exploring Architecture in Islamic Cultures* convened by the Aga Khan Award for Architecture (the first in the series was titled *Architecture and Identity*<sup>2</sup> and was held in Kuala Lumpur, Malaysia, in 1983). This conference on *Regionalism in Architecture* was attended by some of the most prominent architects, planners and theoreticians from the Eastern part of the world. It was during this conference that Suha Ozkan presented his paper “Introduction: Regionalism within Modernism”<sup>3</sup> which described the various trends in regional architecture prevalent in the East. This paper was then further refined in collaboration with Robert Powell, and presented in the form of *A Taxonomy of Regionalism* in the book *Ken Yeang: Rethinking the Environmental Filter*.<sup>4</sup> It is this *Taxonomy of Regionalism* which has been used to create a conceptual framework within which the buildings by Correa and Rewal are examined. The *Taxonomy* has been reproduced below.

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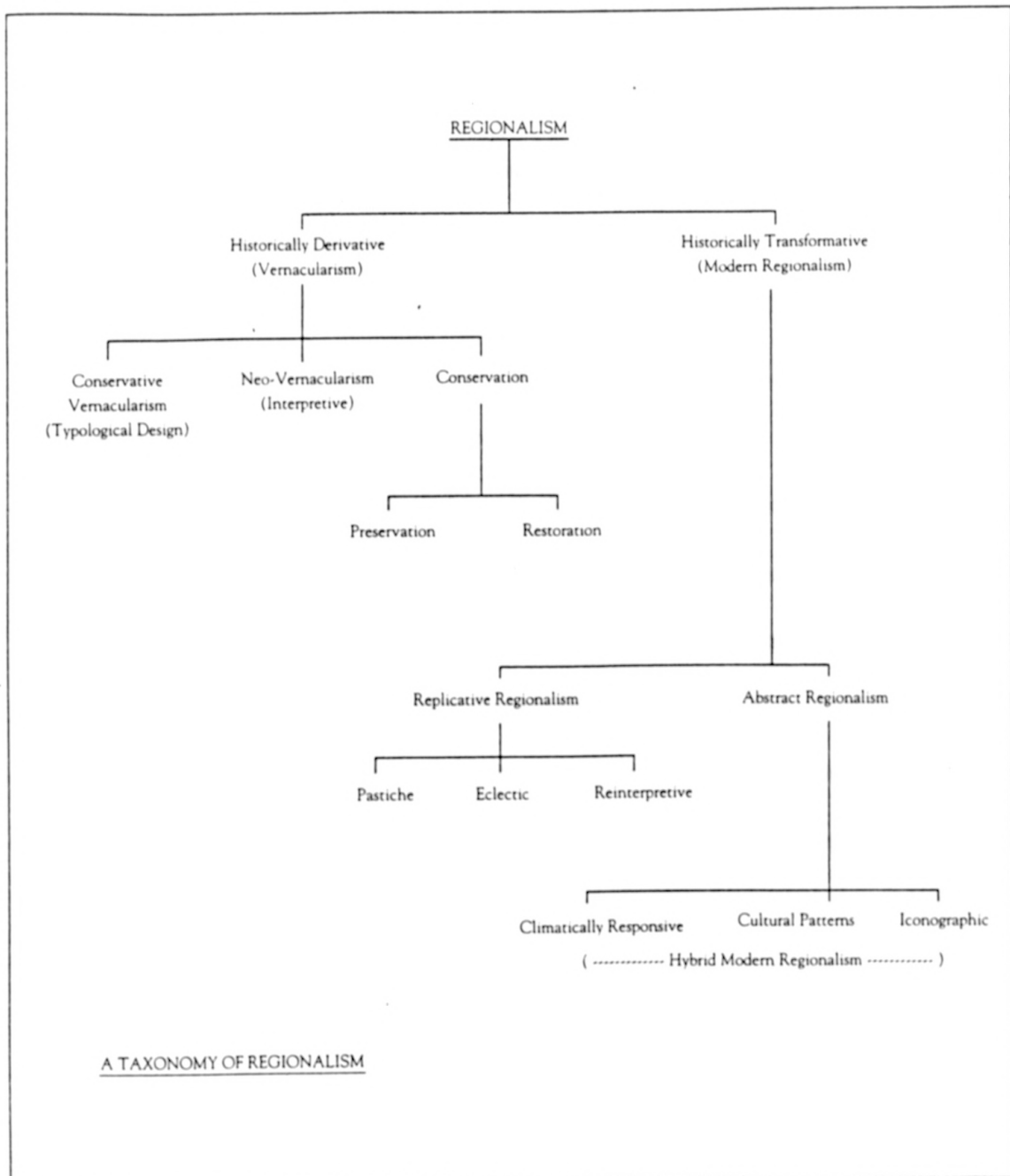
<sup>1</sup> Powell, Robert (ed.). “Regionalism in Architecture--Proceedings of the Second Regional Seminar in the series *Exploring Architecture in Islamic Cultures*” convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985.

<sup>2</sup> Powell, Robert (ed.). “Architecture and Identity--Proceedings of the First Regional Seminar in the series *Exploring Architecture in Islamic Cultures*” convened by The Aga Khan Award for Architecture held between July 25 and 27, 1983, at Kuala Lumpur, Malaysia, Singapore: Concept Media, 1983.

<sup>3</sup> Ozkan, Suha. “Introduction: Regionalism within Modernism” in Powell, Robert (ed.). *Regionalism in Architecture--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures* convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, pp. 8-16.

<sup>4</sup> Powell, Robert and Ozkan, Suha. “A Taxonomy of Regionalism” in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*. Singapore: Landmark Books, 1989, p. 13.

## THE TAXONOMY OF REGIONALISM<sup>5</sup>



The Western thoughts on regionalism are taken from a conference titled the *New Regionalism*<sup>6</sup> held at the University of Texas at Austin, USA in 1986. Prominent

<sup>5</sup> Powell, Robert and Ozkan, Suha. "A Taxonomy of Regionalism" in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*. Singapore: Landmark Books, 1989, p. 13.

among the views presented by various Western architects and theoreticians is a theory put forth by Kenneth Frampton titled “Ten Points for an Architecture of Regionalism: A Provisional Polemic.”<sup>7</sup> In this theory, Frampton puts forth a set of criteria which he thinks will help architects to achieve a valid regional architecture. The theory is in response to the increasing universalization of architectural expression due to the standardized industrial production of building components. Another reason why Frampton has written this theory is because he believes that the mass media in the west has influenced architecture substantially and has made it aim at being “representational” and “photogenic” at the cost of creating meaningful places. It is these trends that Frampton seeks to address. The theory is a variation of what Frampton has otherwise called the theory of *Critical Regionalism* which has been published in at least two other versions in various books so far.<sup>8</sup> This is the other theory used in the theoretical domain put together by this author. The three versions of the theory of *Critical Regionalism* have been condensed into a single framework for purposes of this thesis. The key concepts in this consolidated version of Frampton’s ideas are then integrated into the *Taxonomy of Regionalism* created by Powell and Ozkan. The following are the key concepts of the theory of *Critical Regionalism* used in this thesis:

- 1) Architecture as the embodiment of the cultural thought prevalent in a defined domain.

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<sup>6</sup> Speck, Lawrence (ed.). Report of the seminar titled “New Regionalism” held at the University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*, Vol. 3. New York: Rizzoli, 1987.

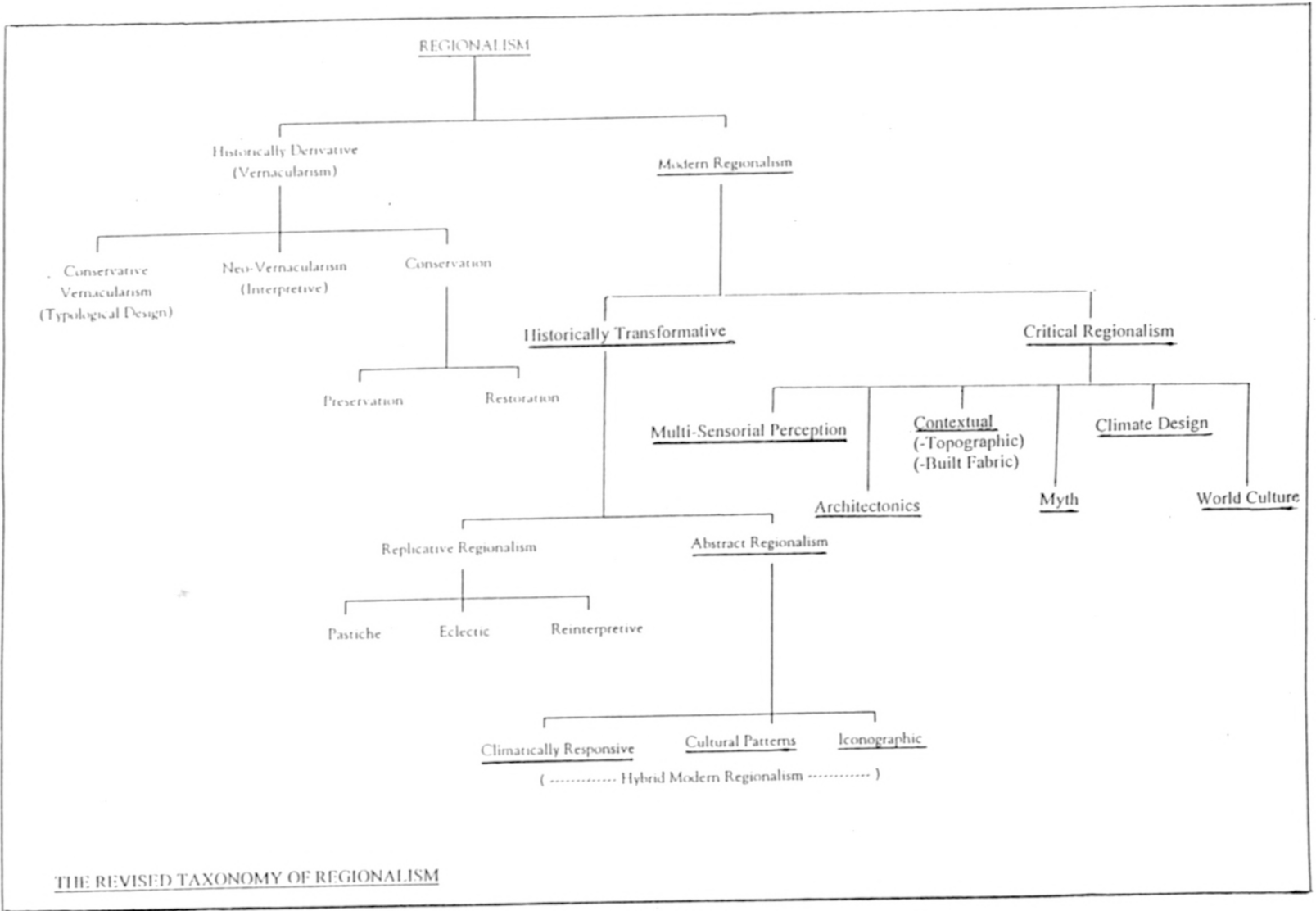
<sup>7</sup> Frampton, Kenneth. “Ten Points for an Architecture of Regionalism: A Provisional Polemic” in *ibid.*, pp. 20-27.

<sup>8</sup> See Frampton, Kenneth. “Towards a Critical Regionalism: Six Points for an Architecture of Resistance” in Foster Hal, (ed.). *The Anti-Aesthetic: Essays in the Postmodern Culture*. Seattle, Washington: Bay Press, 1983; and Frampton, Kenneth. *Modern Architecture: A Critical History*. London: Thames and Hudson, 1992.

- 2) Architecture as a response to and expression of the local climate and light.
- 3) Architecture as an expression of the region's connection to world culture.
- 4) Architecture as an expression of visual and tactile truth in architectural form.
- 5) Architecture as a visual expression of truth in tectonics.
- 6) Architecture as a sympathetic response to the natural and built context.

The *Taxonomy of Regionalism* by Powell and Ozkan is a comprehensive classification of the various strains of regionalism, but does not explicitly include Frampton's notion of *Critical Regionalism*. The reason for this seems to be the differing aims of the two theories which seem to arise out of the differing realities of architectural practice in the Eastern and Western countries. While the West aims to **create** a local identity within a homogeneous universalizing environment brought about by the standardized production of industrial technology, the East aims to **retain** an identity by continuing its past in an environment which is fast becoming homogenized due to increasing Western influences.

It was, therefore, necessary to combine to the two theories of the East and the West mentioned above to give a wider scope to Ozkan and Powell's *Taxonomy of Regionalism* so that it would include the Western strains of regional architecture rather than limit itself only to those found in the East. The incorporation of the Frampton's concepts in the *Taxonomy of Regionalism* has resulted in a revised version of the taxonomy which is reproduced below. It is this *Revised Taxonomy* which is used as the



theoretical framework within which the architectural works by Correa and Rewal mentioned above are examined. The *Revised Taxonomy* has increased the applicability of the framework giving it the potential to be used for similar research in future.

The East is characterized by mainly two strains of regional practice—that built by the people and the other strain built by architects trained in the Western methods of architectural practice. The two buildings selected for examination are designed by architects who are not only trained in Western methods, but have also studied architecture in the West. It is this strain of architectural practice that appears to be facing a crisis of regional and national identity. This thesis, therefore, aims to address the architect-designed architecture of India.

The *Revised Taxonomy* addresses both these strains of architecture in separate branches within the taxonomy. User-designed architecture barely exists in the West. Thus, the theory of *Critical Regionalism* has been added to the branch which addresses the architect-designed buildings. This branch, called “Modern Regionalism” in the *Revised Taxonomy*, splits into “Historically Transformative” regionalism, and *Critical Regionalism*. The “Historically Transformative” branch is further divided into “Replicative Regionalism” and “Abstract Regionalism”. The “Replicative Regionalism” branch is not considered for this research, since, at cursory glance, it appears that the two works selected for study do not fall under this category. Thus, the analysis of the two buildings is done within the relevant domain of “Abstract Regionalism” and *Critical Regionalism* in the *Revised Taxonomy of Regionalism*.

After completing the analysis, it is found that the two buildings are indeed regional in many ways and fulfil almost all the criteria of the relevant domain of “Abstract Regionalism” and *Critical Regionalism* in the *Revised Taxonomy of Regionalism*. Although the two buildings fulfil common criteria, however, the methods of fulfillment appear to be vastly different. The concluding chapter, therefore, examines these differences and establishes them as manifestations of the Rationalist and Empiricist thought processes of Correa and Rewal respectively.

Following a discussion of the Rationalist and Empiricist modes of thought of the two architects, it is suggested that there are several commonalities in the two works. It is these commonalities which seem to be the most significant findings of this research. The commonalities identified are valuable in the possible creation of a contemporary “Indian” school of architectural thought.

At this point, it seems necessary to differentiate between the ideas of regionalism in architecture and national identity. Architecture may be regional while expressing a shared identity of a community or a society. In such a situation, if the community or society is a nation, then that architecture can be said to be a nationalistic expression. The country of India is a composition of numerous such communities, some of which may be vastly different from others. Each region of the north, south, east and west display unique characteristics in terms of language, culture, climate and so on. Under such circumstances, it appears that architecture across the country will be very diverse. How then, can an “Indian” architecture evolve out of such diversity?



Harwell Hamilton Harris has attempted to address these issues of regionalism and nationalism in his essay "Regionalism and Nationalism."<sup>9</sup> According to Harris, regionalism is, at its highest, the expression of liberation. By liberation, Harris means new ways of thought about living, forms of construction, and so on. "It is a picture of individual men discovering the Universe in architectural terms and realizing themselves more fully than before. It is a picture of liberation, of expansion, of diversity."<sup>10</sup> National architecture, on the other hand, according to Harris, is, at its highest, an expression of consolidation. "A nation is a people consolidated. The purpose of national architecture is to further unite people as citizens."<sup>11</sup>

In the two ideas expressed above, one sees the words "diversity" and "unite" being used in the explanation of regionalism and nationalism respectively. In the Indian situation, diversity is plentiful. To arrive at a national expression, Harris says, a unity needs to be achieved within this diversity. The commonalities identified in the two buildings designed by Correa and Rewal help to identify the possibility of achieving this unity, thereby helping in the "consolidation" of which Harris speaks. The commonalities appear to give that distinguishing feature to contemporary architectural practice in India, a feature which can be identified as specifically "Indian". Some of these commonalities are characteristics which not only respond to existing realities in India, but also have the potential of being developed as threads which can continue the architecture of a country as diverse as India long into the future.

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<sup>9</sup> Harwell Hamilton Harris: *A Collection of His Writings and Buildings*. Student Publication of the School of Design, North Carolina State University at Raleigh. Vol. 14, No. 5, 1965, pp. 25-33.

<sup>10</sup> Ibid., p. 29.

<sup>11</sup> Ibid., p. 29.

The concluding chapter includes a brief criticism of the two buildings and provides possible suggestions for developing this research further. In conclusion, it is suggested that it is important to move quickly to address the issue of how to create a regionally expressive architecture for India because there is a danger that the universalizing forces of standardized technology which are fast entering the country will overwhelm all such efforts in the future.

## CHAPTER II

### INTRODUCTION AND BACKGROUND

*"It is not too soon to ask why such ideas [Postmodernism] gained purchase and why they are no longer appropriate, and then ask what might take their place."*<sup>1</sup>

-- Michael Benedikt.

Architecture in India has a long history of strong influences from the west, initiated by the British Raj. The British imported their architecture and built elaborately on Indian soil, with the major stylistic component being European.<sup>2</sup> Adaptation to local and regional context, if any, was done with regard to climatological concerns. This was the first time the Indian subcontinent was faced with the imposition of "Westernization".<sup>3</sup> As Tillotson wrote, "Westernization did not mean simply offering Indians the advantages of Western civilization, it meant *substituting* that civilization for local traditions"<sup>4</sup>

Such imposed ideas over a long term tended to interfere adversely with the traditional Indian architecture evolved over centuries.<sup>5</sup> It was only in the last quarter of the last century that the British started to incorporate traditional Indian architectural

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<sup>1</sup> Benedikt, Michael (ed.). "Preface" in "Buildings and Reality: Architecture in the Age of Information", *Center: A Journal For Architecture In America*, vol. 4. New York: Rizzoli, 1988.

<sup>2</sup> Tillotson, G. H. R. *The Tradition of Indian Architecture: Continuity, Controversy and Change Since 1850*. New Haven & London: Yale University Press, 1989.

<sup>3</sup> There were the Moghul invaders before the British, but that invasion was of a different kind. The Moghuls came with the intention of making India their home. This seems evident considering the fact that the Moghuls did not maintain their headquarters outside the country. The British, on the other hand, acted on the instructions from London. This made the British rule different as India then became a "colony" of the British, facilitating the benefits accrued by London.

<sup>4</sup> Ibid., p. 33, (italics added).

<sup>5</sup> Ibid., p. 60.

elements with the Colonial. These experiments were called “Indo-Saracenic” architecture.<sup>6</sup>

But the British Indo-Saracenic architecture had a strong bias towards Western style. This was because unlike the authentic Indian architecture prevalent prior to the arrival of the British, wherein construction was a coordinated effort by several *mistris* (craftsmen) through the formation of a *sreni* (guild), the British Indo-Saracenic attempt involved always a British architect or a British trained Indian architect dictating the design as per Western aesthetics and methods. This diluted the attempt at the revival of authenticity.<sup>7</sup>

A famous example of the Indo-Saracenic “style” is Lutyens’ Delhi. According to Tillotson, this plan was drawn at the behest of King George who wanted to incorporate a strong Indian flavour in the design. But Lutyens, who despised Indian architecture<sup>8</sup>, advocated against the idea as he was of the opinion that Indian architecture owed its “few beauties to Western Influence”.<sup>9</sup> Lutyens almost convinced the King to drop the idea, but the Viceroy of India was adamant. Ultimately, due to political considerations, Lutyens had to bow to the King’s wishes, although he did not do so in toto.

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<sup>6</sup> Tillotson, G. H. R. *The Tradition of Indian Architecture: Continuity, Controversy and Change Since 1850*. New Haven & London: Yale University Press, 1989, p. 38. The term “Indo-Saracenic” relates more to the Mughal influence on Indian architecture as is widely accepted. But the British chose to use this phrase. For explanation, see p.46, 54. For my purpose, I shall call it the British Indo-Saracenic architecture.

<sup>7</sup> Ibid., p. 60.

<sup>8</sup> Ibid., p. 106.

<sup>9</sup> Ibid., p. 106.

In Tillotson's opinion, some of Lutyens' buildings are very fine-- especially the Viceroy's house. But,

*"they marked the final demise of India's indigenous traditions. . . . From this point onwards, the Indian architect had nothing of his own traditions to work from, but only what the West had given him. . . . But the future held many more gifts, for Western influence did not cease with the British Raj."*<sup>10</sup>

Among these "gifts" was to be the adoption of modern Western architectural vocabulary, methods and education by the Indian architect. This gift was given official patronage by the late Prime Minister Pandit Jawaharlal Nehru, when he invited Le Corbusier to design the city of Chandigarh in Northern India. Prime Minister Nehru's decision was significant in the history of independent India, as he, with the intention of beginning a new chapter with India's independence, while burying the Colonial past, wanted to look toward the future of independent India.<sup>11</sup> This move marked the advent of Modern architecture in India.

According to Tillotson, there was an irony in this decision, in that Nehru turned back to the West to find the forms of Modern architecture, thus inviting another Western Influence on Indian architecture.<sup>12</sup> But Nehru's decision, it seems, was inevitable considering the world scenario after the two world wars. His move, perhaps, should not be judged as being right or wrong, but on the basis of whether it was appropriate or not within the increasingly interdependent post-world-war world. The

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<sup>10</sup> Tillotson, G. H. R. *The Tradition of Indian Architecture: Continuity, Controversy and Change Since 1850*. New Haven & London: Yale University Press, 1989, p. 126.

<sup>11</sup> *Ibid.*, p. 126.

subject of interdependence and the role, therefore, of young Asian nations is discussed by Takdir Alisjahbana, Vice-Chairman (1955), University of Indonesia, Jakarta, in a paper presented at a conference titled *Cultural Freedom in Asia*<sup>13</sup> held at Rangoon, Myanmar (formerly Burma).

*"The two world wars which characterized the twentieth century have brought about not only far reaching political and economic consequences, but also tremendous progress in science and technology. These have forced upon man the necessity of discovering new principles of life and culture, if he would avoid being destroyed by the consequences of his own ingenuity."*<sup>14</sup>

The Asian intellectual, according to Alisjahbana, faces two crises today: the crisis of Asia resulting from the impact of the West, and the other greater crisis, the crisis of the Modern world which embraces the whole of humankind. For the second crisis, Alisjahbana says--

*"... Asian intellectuals must also deal with the crisis of the modern world itself. The development of politics, economics, and ethics (in Asian countries) has not kept pace with the progress of technology, which has already united the world and changed life and culture more radically than ever before. But there is no point in blaming modern science and technology for our troubles. Let us accept them, just as we accept other achievements of man--fire, the axe, the plough, the cart, ships, steam engines and electricity--as marking a stage in human progress..."*<sup>15</sup>

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<sup>12</sup> Ibid., p. 127.

<sup>13</sup> Convened by the *Congress For Cultural Freedom* (France) and the *Society For The Extension Of Democratic Ideals* (Burma) between February 17 and 20, 1955.

<sup>14</sup> Alisjahbana, Takdir. "Traditional And Modern Values In Our Culture" in *Report of the Rangoon Conference on 'Cultural Freedom in Asia'*. Rutland, Vermont & Tokyo, Japan: Charles E. Tuttle Company, 1956.

<sup>15</sup> Ibid., p. 43.

*“ But they (the Asian intellectuals) must realise that however great the problems presented by modern culture, we cannot escape them by going back in the past. We have no alternative but to master modern science and technology in order to bring prosperity, health and other benefits of science that our people are demanding.”*<sup>16</sup>

Alisjahbana goes on to relate the Asian nations’ national policies with the political and economic interdependence of the world due to science and technology. Along with the modern technology came architectural modernism as an integral part. Hence, it could be argued that Prime Minister Nehru had no option but to invite the creations and derivations of modern technology, in the form of Le Corbusier’s plans and buildings for Chandigarh, for the benefit of the people of India in the present interdependent world. Architectural Modernism thus became a political statement in India forming the basis for a fresh direction in Indian architecture.

The continuing influence from the West did not stop with Modernism. Following independence, many architectural firms persisted with practices using Western methods of design. The Indian Institute of Architects maintained its affiliations with the Royal Institute of British Architects and through its English language journal members kept abreast of the European scene. Educational institutions continued to employ the pre-independence British methods.<sup>17</sup> Besides, the “educated” Indian had studied within the British system and continued with that outlook.<sup>18</sup> Thus the Western influence continued.

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<sup>16</sup> Alisjahbana, Takdir. “Traditional And Modern Values In Our Culture” in *Report of the Rangoon Conference on ‘Cultural Freedom in Asia’*. Rutland, Vermont & Tokyo, Japan: Charles E. Tuttle Company, 1956, p. 40.

<sup>17</sup> Evenson, Norma. *The Indian Metropolis*. New Haven & London: Yale University Press, 1989, p. 181.

<sup>18</sup> Tillotson, G. H. R. *The Tradition of Indian Architecture: Continuity, Controversy and Change Since 1850*. New Haven & London: Yale University Press, 1989.

The advent of the radio and television, which were inventions of the West, ensured another such influence culturally, during and after Indian independence until today. The changes in architecture which develop in the West filter down to India.<sup>19</sup> Today, many Indians have begun to contend that in an age of rapid communication, contemporary building must be expected to reflect complex crosscurrents of international influence, even while others continue the debate upon the question of dependence on foreign models.<sup>20</sup> The former continue to bring in the “international influence” through the practice of the Postmodernist style of architecture. Meanwhile, for at least a time in the 1970’s and 80’s the West abandoned Modernism<sup>21</sup> in an attempt to seek new directions in architecture. The “new direction” after Modernism was Postmodernism. The effects of Postmodernism first came into India in the 1980’s and that approach to architecture is being practiced with vigour in urban India today.<sup>22</sup>

The Age of Information<sup>23</sup> is said to have played a role in the rise of Postmodernism.<sup>24</sup> India, being a part of this Age, the tools of which (television and computers), are governed primarily by the Western nations through satellite television, could not ignore its effects.<sup>25</sup> But the West has almost abandoned Postmodernism as

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<sup>19</sup> Tillotson, G. H. R. *The Tradition of Indian Architecture: Continuity, Controversy and Change Since 1850*. New Haven & London: Yale University Press, 1989, and Evenson, Norma. *The Indian Metropolis*. New Haven & London: Yale University Press, 1989.

<sup>20</sup> Evenson, Norma. *The Indian Metropolis*. New Haven & London: Yale University Press, 1989, pp. 267-268.

<sup>21</sup> Ibid., p. 268.

<sup>22</sup> Ahuja, Sarayu (ed.). “The Hafeez Factor”, *The Indian Architect and Builder*, issue dated July, 1994. Mumbai: Business Press.

<sup>23</sup> A phrase used to convey the influence of television and computers on mankind, used in Benedikt, Michael (ed.). “Buildings and Reality: Architecture in the Age of Information”, *Center: A Journal For Architecture In America*, vol. 4. New York: Rizzoli, 1988.

<sup>24</sup> Ibid.

<sup>25</sup> Taylor, Brian Brace. “Perspectives and Limits on Regionalism and Architectural Identity”, *MIMAR-19: Architecture in Development*. Singapore: Concept Media, Jan-Mar, 1986, p. 19.



demonstrated by Michael Benedikt's quote in the beginning of this chapter. Therefore, new movements such as Deconstruction, Realism and so on are being attempted.<sup>26</sup> It may not be long before architects in India start adopting these movements without testing their validity in the Indian context. How long can this blind emulation of architectural trends of the West continue? The search for a permanent direction by the West tends to suggest an experimental attitude with relation to architectural movements. Are these experiments valid in the Indian context?<sup>27</sup> Do the conditions in India necessitate the uncritical adoption of this experimental approach? There is a continuing debate on such issues in India and other nations of the East today.<sup>28</sup>

According to Alisjahbana, the Asian intellectuals, as a result of their education, live in a modern age; but as a result of their birth, they remain within the

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<sup>26</sup> Benedikt, Michael (ed.). "Buildings and Reality: Architecture in the Age of Information", *Center: A Journal For Architecture In America*, vol. 4. New York: Rizzoli, 1988.

<sup>27</sup> See Jumsai, Sumet. "The West Pacific Region versus Punk Architecture" in *MIMAR 19: Architecture in Development*. Singapore: Concept Media, Jan-Mar, 1986, p. 22.

<sup>28</sup> Sharma, Sanjeev. *An Inquiry Into Kenneth Frampton's 'Critical Regionalism': Charles Correa's Gandhi Memorial Museum & Balkrishna Doshi's Gandhi Labour Institute*. M. Arch thesis, Kansas State University, Kansas, 1994.

bounds of traditional culture.<sup>29</sup> Hence, the Asian intellectuals' dilemma is, as philosopher Paul Ricoeur said: "how to become modern and return to the sources".<sup>30</sup> One answer to this could be adoption of a regionalist approach to architecture.<sup>31</sup>

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<sup>29</sup> Alisjahbana, Takdir. "Traditional And Modern Values In Our Culture" in *Report of the Rangoon Conference on 'Cultural Freedom in Asia'*. Rutland, Vermont & Tokyo, Japan: Charles E. Tuttle Company, 1956, p. 40.

<sup>30</sup> Ricoeur, Paul. "Universal Civilization and National Cultures", *History and Truth*, Evanston: Northwestern University Press, 1965, pp. 276-277.

<sup>31</sup> Sharma, Sanjeev. *An Inquiry Into Kenneth Frampton's 'Critical Regionalism': Charles Correa's Gandhi Memorial Museum & Balkrishna Doshi's Gandhi Labour Institute*. M. Arch thesis, Kansas State University, Kansas, 1994.

## CHAPTER III

### THE PREMISE OF REGIONALISM

“Regionalism is a chronological, not a geographical idea.”

- Michael Dennis.<sup>1</sup>

The above statement, if taken literally, contradicts the commonly accepted meaning of the word “Regional” which, according to the Oxford Dictionary, is of a “geographical area or division, having definable boundaries or characteristics.”<sup>2</sup> But the statement reflects precisely what “Regionalism” in architecture can be defined as— basically, a product of “place” as well as “time”. Lawrence Speck calls this the *New Regionalism*<sup>3</sup>. According to Thomas Schumacher, “. . . any architecture must, by necessity, be ‘of its time’ when viewed retrospectively.”<sup>4</sup> For, if architecture is the reflection of a culture and civilization of the past,<sup>5</sup> then it must be a product of time as well as space.

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<sup>1</sup> From, Schumacher, Thomas. “Regional Intentions and Contemporary Architecture: A Critique” in Speck, Lawrence (ed.). *Center: A Journal for Architecture in America*, Vol. 3, New York: Rizzoli, 1987.

<sup>2</sup> Thompson, Della(ed.). *The Pocket Oxford Dictionary*, Eighth Edition (Indian Edition), Delhi: The Oxford University Press, 1992.

<sup>3</sup> Speck, Lawrence. “Regionalism and Invention” in Speck, Lawrence (ed.). *Center: A Journal for Architecture in America*, vol. 3, New York: Rizzoli, 1987.

<sup>4</sup> Schumacher, Thomas. “Regional Intentions and Contemporary Architecture: A Critique” in Speck, Lawrence (ed.). *Center: A Journal for Architecture in America*, Vol. 3, New York: Rizzoli, 1987., p.55.

## ORIGINS OF REGIONALISM

According to architectural theorist and critic Alan Colquhoun, the regional direction of architectural criticism took shape in the late eighteenth century<sup>6</sup>, when encouragement was given to architecture that referred to the local climate, geography, materials and cultural traditions.

In the twentieth century, the Modern Movement saw Le Corbusier adopting a reference to the Mediterranean vernacular while giving equal prominence to the idea of industrial standardization. Le Corbusier's work displayed a strong inclination toward separate vernacular regional traditions and he proposed a Europe divided into "natural" regions including a Mediterranean region.<sup>7</sup> Subsequently, Colquhoun says, the Regionalist Movement permeated architectural Modernism to a great extent in the period following the second World War as seen in the successive editions of *Space, Time and Architecture*, written by Sigfried Giedion, first published in 1940. Alvar Aalto is cited as an example of modernist regionalism by Colquhoun.

The progress of regionalism is traced by Kenneth Frampton in his book *Modern Architecture: A Critical History*<sup>8</sup>. Frampton has documented perhaps the earliest public expression of the idea of regionalism in Modern architecture, beginning with

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<sup>5</sup> Ameen, Farooq (ed.). "Editorial" in *MARG: A Magazine of the Arts*, Vol.48, No. 3, Mumbai: Marg Publications, March 1997.

<sup>6</sup> Colquhoun, Alan. "The Concept of Regionalism" in Nalbantoglu, G. B. and Thai, Wong C. (eds.). *Postcolonial Space(s)*, New York: Princeton Architectural Press, 1997, p. 13.

<sup>7</sup> Ibid., p. 14.

<sup>8</sup> Frampton, Kenneth. *Modern Architecture: A Critical History*, Third Edition, London: Thames and Hudson, 1992.

Harwell Hamilton Harris's paper "Regionalism and Nationalism" which Harris presented at the North West Regional Council of the American Institute of Architects in Eugene, Oregon, in 1954. In this address, Harris put forth his ideas on two types of regional architecture: the Liberative and the Restrictive. Liberative Regionalism is said to be a "manifestation of a region that is especially in tune with the emerging thought of the time"<sup>9</sup>, while Restrictive Regionalism is that which blocks out external influences that threaten to destroy the distinctive characteristics of a region. To use Frampton's terms, such external influences are "universalizing" in nature.

In 1961, Paul Ricoeur, in his passage "Universal Civilization and National Cultures",<sup>10</sup> argues for a return to the local cultural "sources" in the process of becoming "modern". Ricoeur's statement is based on his understanding of the contemporary situation. According to him, today we are faced with a universalizing culture which is diluting the forms and meanings of ancient local cultures.

By the time Ricoeur wrote his passage referred to above, several modern architects across the world were said to be "regional" in their practice. Among others Frampton mentions are Danish architect Jorn Utzon, Grup R of Barcelona, Avaro Siza Vieira of Portugal, Amancio Williams in Argentina, and Oscar Niemeyer and Affonso Reidy of Brazil.

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<sup>9</sup> Frampton, Kenneth. *Modern Architecture: A Critical History*, Third Edition, London: Thames and Hudson, 1992, p.320.

<sup>10</sup> Ricoeur, Paul. "Universal Civilization and National Cultures" in *History and Truth*, Evanston: Northwestern University Press, 1965, pp. 276-277.

But the *raison d'être* of regionalism in the West is said to be the rejection of International Style Modernism and the desire to provide an alternative to it.<sup>11</sup> While Modernism attempted to break links with the past, Internationalism attempted to develop a uniform universal culture. This is the situation which gave rise to Ricoeur's thoughts about the dilemma of how to become modern and return to the sources.<sup>12</sup>

Thus, the prospects of a regional approach to architecture gained prominence across the world and a lively debate ensued in the 1970's and 80's. Kenneth Frampton developed a theory titled *Critical Regionalism*<sup>13</sup> in an attempt to address the dilemma posed by Paul Ricoeur. William Curtis proposed what he called *Authentic Regionalism*, an approach to place making said to be distinct from *Critical Regionalism*.<sup>14</sup> Several discussions and seminars were held. Prominent among them were the convention at University of Texas, Austin, Texas titled *New Regionalism*,<sup>15</sup> and the second of the series of four seminars convened in Dhaka, Bangladesh, by The Aga Khan Award for Architecture titled *Regionalism in Architecture*<sup>16</sup>. The first seminar in the series, titled

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<sup>11</sup> Sharma, Sanjeev. *An Inquiry into Kenneth Frampton's 'Critical Regionalism': Charles Correa's Gandhi Memorial Museum and Balkrishna Doshi's Gandhi Labour Institute*, M. Arch. Thesis, Kansas State University, 1994, p. 19.

<sup>12</sup> Ricoeur, Paul. "Universal Civilization and National Cultures" in *History and Truth*, Evanston: Northwestern University Press, 1965, pp. 276-277.

<sup>13</sup> Frampton, Kenneth. "Ten Points on an Architecture of Regionalism: A Provisional Polemic" in Speck, Lawrence (ed.). *Center: A Journal for Architecture in America*, Vol. 3, New York: Rizzoli, 1987.

<sup>14</sup> Curtis, William J. R. "Regionalism in Architecture." In Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, pp. 73-77.

<sup>15</sup> Speck, Lawrence (ed.). *Center: A Journal for Architecture in America*, Vol. 3, New York: Rizzoli, 1987.

<sup>16</sup> Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985.

*Architecture and Identity*,<sup>17</sup> held in Kuala Lumpur, Malaysia, is also relevant in this context.

These seminars in Austin and Dhaka seem representative of the viewpoints of the East and the West respectively. The seminar in Dhaka is important because it was a gathering of the most influential personalities of the East who have espoused the cause of regionalism in architecture. The gathering included many architects and planners including Suha Ozkan, Hassan-Uddin Khan, Mulk Raj Anand, Romi Khosla, Geoffrey Bawa, and Balkrishna Doshi. The seminar on the *New Regionalism* in Texas was also an attempt in the same direction with theoreticians like Kenneth Frampton, Lawrence Speck, Elizabeth Plater-Zyberk, Ricardo Legorreta, Thomas Shumacher and others attempting to concretize the concept of Regionalism through suggestions about what aspects can constitute an authentic regionalism.

An examination of the papers presented at the two seminars indicates that the causes for the rise of regionalism in the East and the West are different. To identify these differences between the East and the West, it is first necessary to examine the ideas expressed in the two seminars. These ideas are separately summarized in this and the following chapter, starting with the seminar on the *New Regionalism* held in Austin, Texas.

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<sup>17</sup> Powell, Robert (ed.). *Architecture and Identity*--Proceedings of the First Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held

## THE WESTERN PERSPECTIVE

The seminar on the *New Regionalism*<sup>18</sup> held at University of Texas at Austin provided an interesting set of ideas about regionalism in architecture as seen from a characteristically Western point of view. The report on this conference is divided into two parts: the first selectively summarizes the papers presented and the second reinforces the ideas expressed in the first part, through documentation of existing “Regional” precincts and buildings.

It becomes apparent that regionalism is seen by participants in this conference as one among many options in the West. It is not seen as an inevitable direction in the search for a cultural identity which, as we shall see later, it is in the East. The introduction to the report says that the domain of regionalism is vast and not defined in its methods. It also makes it clear that the intention of the book is not to define the limits of regionalism, nor is it intended to coin a new term with the name “New Regionalism”.

The seminar proposed four distinct positions from which regional architecture can be generated—invention, innovation, continuation of tradition, and an approach based upon regional determinants and social content and values. The first two

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between July 25 and 27, 1983, at Kuala Lumpur, Malaysia, Singapore: Concept Media, 1983.

<sup>18</sup> Speck, Lawrence(ed.). Report of the seminar titled “New Regionalism” held at University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*- Vol.3. New York: Rizzoli, 1987.



positions propose a fresh development based upon the current situation. The others, essentially, propose to continue the prevalent direction in a society.

The strategy of “Invention” calls for a response to the specifics of a situation. It may arise out of a *renewed* awareness of longstanding particulars of a place. This approach to the “New Regionalism” indicates that the past is not looked at with the hope of *continuing* a formula, but as a time period which has given a place certain cultural peculiarities. The regionalism which arises out of such peculiarities is necessarily “a de facto critical and responsive approach”, according to Lawrence Speck, who proposed the idea of invention.<sup>19</sup> This “response” may be adaptable to other regions also. The origin of Jazz music in New Orleans as a response to the particulars of that place, is cited as an example. In essence, inventive regionalism does not favour a continuous development of the past, but proposes to respond to existing peculiarities of a place.

The idea of “Innovative” regionalism is somewhat similar to that of “Inventive” regionalism in the sense that a necessary discontinuity with the past is also emphasized. Innovative regionalism looks at architecture of the region as it might be viewed from the distant future. It does not attempt to create a regional architecture as of today, but one which may be recognized as such in the future. Far into the future, the use of today’s air-conditioners and the hermetically sealed buildings required by them, coupled with the wafer thin walls of today, and the large spans of flat ceilings, will be

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<sup>19</sup> Speck, Lawrence. “Regionalism and Invention” in Speck, Lawrence(ed.). Report of the seminar titled “New Regionalism” held at University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*- Vol.3. New York: Rizzoli, 1987.

looked at as regional in terms of tectonics. This is the logic of Innovative regionalism. Rather than being a “response” to a region it is said to be an “expression” of it. The difference between “response” and “expression” is brought out by comparing “pre-industrial” regionalism in America and the “post-industrial” regionalism of today. Pre-industrial architecture in America was regional in the sense that it “posed” one region’s inflections against another. These “inflections” were derived as a response, whether self-conscious or unself-conscious, to the realities of the place in which a building was built. This is not so in “post-industrial” regionalism. “Post-industrial” regional architecture is a reaction to the dominance of the International Style. Thomas Schumacher, who proposed the idea of Innovative regionalism,<sup>20</sup> is of the opinion that the struggle, therefore, should be against the macro-scale of bureautechnocratic cultures. He asserts that it may be more difficult to subdue General Motors than Pittsburgh Plate Glass, referring to the high level of standardization prevalent today, and to the implications of automobile culture in planning.

Thus, it seems that inventive and innovative forms of regionalism do not favour a continuation of history, but prefer to start afresh and look into the future while using today’s technology.

Contrary to these two ideas of invention and innovation, is the third proposal, “Continuation,” which favours the continuity of tradition. This proposal allows

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<sup>20</sup> Schumacher, Thomas. “Regional Intentions and Contemporary Architecture: A Critique” in Speck, Lawrence(ed.). Report of the seminar titled “New Regionalism” held at University of Texas at Austin,

the use of traditional forms only if they come out of a passionate feeling for the craft and the art of architecture. Such forms should be meaningfully used and should be appropriate within the region. Robert Stern, an advocate of this approach to regionalism at the conference in Austin, states that “Architecture is a dialogue with the past, carried on in the present, with an eye towards the future.”<sup>21</sup> This is the underlying motivation for a regional architecture which attempts to continue tradition.

The issue of contextuality, as a necessary condition for achieving a continuity with tradition, is incorporated within Stern’s proposal. According to him, the public is entitled to a building that does not threaten by its very being, the aesthetic and the cultural values which the buildings around it convey. The surrounding buildings form the tradition of that region. Hence, if tradition has to be incorporated in the architecture, it is necessary to address the context. However, it is not clear what the author has to say about the context of the pseudo-vernacular architecture of the strip mall, and how a building should respond within such a context.

The fourth approach observed in the Austin seminar was one which has to do with two realms: interpretation of regional determinants and tradition, and the embodiment of social content and values. This framework addresses history in the form of tradition, responds appropriately to the physicality of the region and attempts to make

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USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*-Vol.3. New York: Rizzoli, 1987.

<sup>21</sup> Stern, Robert. “Regionalism and the Continuity of Tradition” in in Speck, Lawrence(ed.). Report of the seminar titled “New Regionalism” held at University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*- Vol.3. New York: Rizzoli, 1987, p. 63.

people use the building, making it localized, rather than specialized in function. Wayne Attoe, an advocate of this approach, has derived this proposal from the discussions related to a design competition for a building in Phoenix, Arizona. This approach is, therefore, specific to the realities of Phoenix. Based upon the three objectives mentioned above, Attoe identifies three strains of Regionalism. These are (a) Physical, (b) Interpretive and (c) Social. The following is a brief elaboration of each of these aspects of regionalism:

(a) *Physical*: This approach is based upon the built characteristics of a region which are, in turn, based upon the sun, heat, cold, local materials, vegetation and historic precedents—basically the physicality of the region. These characteristics may include architectural elements like arcades, colonnades, courtyards, shaded passages, local vegetation, plazas, regional materials, colour play, use of light, and so on, which are appropriate to the local climate of a region and which may have been used before in that region.

(b) *Interpretive*: the “interpretation” here is associated with imageability. It has more to do with the topography or history. One example is that of recessed windows in a blank facade as is often used in a desert climate. This window design gives the impression that the walls are thick and the glass is recessed—an appropriate response to a desert climate.

(c) *Social*: this has mainly to do with responding to the present social values of the people. This strain of regionalism is not to be confused with cultural values. While cultural values may be considered, addressing social content and values means drawing people to a building so that they may use it meaningfully.

The four approaches to regionalism articulated at the conference in Austin are of a conflicting nature when it comes to the issue of the connection of contemporary buildings with history and tradition. These conflicting proposals demonstrate that historical connection is not important in the West and is merely an individual architect's and/or client's choice. These proposals are not definitive in the sense that they fail to prescribe a "formula" to achieve their respective types of regional architecture.

The three "strains" of regionalism identified by Attoe may not be interpreted as a theory for achieving a regional architecture since, by his own admission, they relate to the specifics of Phoenix, Arizona.

The seminar at Austin contained only one proposal which claimed to be a theory giving specific directions about how to achieve a modern regional architecture. This theory is called *Critical Regionalism*<sup>22</sup>, and is proposed by Kenneth Frampton. Frampton has proposed this theory in at least three versions, published in various books,<sup>23</sup> one of which is in the proceedings of the conference in Texas. *Critical Regionalism* is a proposal for arriving at a regionalist architecture that is based upon the realities of the West. It addresses some of the issues brought forth by others at the seminar in Austin, as we shall see later in this chapter. The following, which is a synthesized version of all three versions of Frampton's theory, is split into two parts—ideology and practice.

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<sup>22</sup> Frampton, Kenneth. "Ten Points on an Architecture of Regionalism: A Provisional Polemic" in in Speck, Lawrence(ed.). Report of the seminar titled "New Regionalism" held at University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*-Vol.3. New York: Rizzoli, 1987, pp.20-27.

<sup>23</sup> See Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance" in Foster Hal, (ed.). *The Anti-Aesthetic: Essays in the Postmodern Culture*. Seattle, Washington: Bay Press,

## Kenneth Frampton's Theory of 'Critical Regionalism'

Frampton describes the factors which led to the creation of his theory of *Critical Regionalism* in his compilation of essays titled *Modern Architecture and the Critical Present*<sup>24</sup>. In this compilation, Frampton subscribes to the thoughts of Hannah Arendt, who describes the division in Western history between art and industrial production. The process of industrialization saw the diminishing of the arts and crafts as a means of expression for society. Focus was given to industrial production which developed "useful" objects. Art, therefore, was increasingly made for art's sake. The utility of art was lost to the overpowering functional efficiency of mass production. Thus, art became identified as a commodity. The result was that cultural expression and objects of utility were separated due to the advent of mass production. This phenomenon affected architecture also. Buildings came to be designed in response to the mechanics of their construction, or elements such as cranes, elevators, escalators, service cores and automobiles. The automobile revolutionized the urban form to such a great extent that the configuration of the city came to be based more on the logic and form of freeways than on the effort at creation of place. Coupled with this, the high-rise buildings which stand as a manifestation of industrial production, are designed as isolated forms, thus destroying any attempt at place creation in an urban environment. Streets are designed more to accommodate automobiles than for pedestrian public use.

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1983, and Frampton, Kenneth. *Modern Architecture: A Critical History*. London: Thames and Hudson, 1992.

<sup>24</sup> Frampton, Kenneth. *Modern Architecture: A Critical History*. London: Thames and Hudson, 1992.

In the essay “Towards a Critical Regionalism: Six Points for an Architecture of Resistance”,<sup>25</sup> Frampton has interpreted the results of this phenomenon of industrialization, again using Arendt’s thoughts, as a division between Culture and Civilization. The Oxford English Dictionary defines “Culture” as the “intellectual or artistic expression” of a people, while “Civilization” is defined as “an advanced stage or system of social development”. Thus in today’s Western society, Frampton thinks, there is a division between the meaningful cultural expression of people and the machine-dictated system of social life. Industrial production is not culture-specific and has universalizing tendencies. Using Hans Sedlmayr’s thoughts, Frampton explains that this phenomenon of universalization results in a loss of character, which eventually leads to a loss of identity for a society.<sup>26</sup>

Frampton, therefore, has attempted to address this problem of how to create local and regional identity within the context of a universalizing environment by evolving his theory of *Critical Regionalism*. The theory is a response to the dilemma posed by Paul Ricoeur: how to become modern and return to the sources.<sup>27</sup> It seems necessary to understand what Ricoeur means by this:

*The phenomenon of universalization, while being an advancement of mankind, constitutes a sort of subtle destruction, not only of traditional cultures, which might not be an irreparable wrong, but also of what I shall call for the time being the creative nucleus on the basis of*

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<sup>25</sup> Frampton, Kenneth. “Towards a Critical Regionalism: Six Points for an Architecture of Resistance” in Foster, Hal (ed.). *The Anti-Aesthetic: Essays in the Postmodern Culture*. Seattle, Washington: Bay Press, 1983.

<sup>26</sup> Frampton, Kenneth. “Place, Production and Architecture: Towards a Critical Theory of Building” in Frampton, Kenneth. *Modern Architecture and the Critical Present*. London: Architectural Design, 1982, p.45.

<sup>27</sup> Ricoeur, Paul. “Universal Civilization and National Cultures” in *History and Truth*. Evanston: Northwestern University Press, 1965.

*which we interpret life, what I shall call in advance the ethical and mythical nucleus of mankind. The conflict springs up from there. We have the feeling that this single world civilization at the same time exerts a sort of attrition or wearing away at the expense of cultural resources which have made the great civilizations of the past. This threat is expressed, among other disturbing effects, by the spreading before our eyes of a mediocre civilization which is the absurd counterpart of what I was just calling elementary culture. Everywhere throughout the world, one finds the same bad movie, the same slot machines, the same plastic or aluminum atrocities, the same twisting of language by propaganda, etc. It seems as if mankind, by approaching en masse a basic consumer culture, were also stopped en masse at a sub-cultural level. Thus we come to the crucial problem confronting nations just rising from underdevelopment. In order to get on to the road towards modernization, is it necessary to jettison the old cultural past which has been the raison d'être of a nation? . . . whence the paradox: on the one hand, it has to root itself in the soil of its past, forge a national spirit, and unfurl this spiritual and cultural revindication before the colonialist's personality. But in order to take part in modern civilization, it is necessary at the same time to take part in scientific, technical and political rationality, something which very often requires the pure and simple abandon of a whole cultural past. It is a fact: every culture cannot sustain and absorb the shock of modern civilization. There is the paradox: how to become modern and to return to the sources; how to revive an old dormant civilization.<sup>28</sup>*

Thus, Frampton attempts to arrive at a mediation between universal civilization and local culture, in response to the dilemma posed by Ricoeur.

### ***The Ideology of 'Critical Regionalism'***

The term "Critical Regionalism" was coined by Alexander Tzonis and Liane Lefaivre<sup>29</sup> and was used to convey an idea which—"upholds the individual and

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<sup>28</sup> Ricoeur, Paul. "Universal Civilization and National Cultures" in *History and Truth*. Evanston: Northwestern University Press, 1965, pp.276-277.

<sup>29</sup> Tzonis, Alexander and Lefaivre, Liane. "The Grid and the Pathway: and Introduction to the Work of Dimitris and Susana Antonakakis" in *Architecture in Greece* 15 Athens:1981.



local architectonic features against more universal and abstract ones.”<sup>30</sup> It is this term that Frampton has adopted to outline a theory of *Critical Regionalism*. According to Frampton, *Critical Regionalism* is necessarily “critical” in practice. To many observers, the word critical has not been adequately defined by Frampton, but Alan Colquhoun, in the book, *Postcolonial Spaces*<sup>31</sup>, attempts to define it. There are two parts to the meaning of the word “critical” as defined by Colquhoun. The first is “resistance against the appropriation of a way of life and a bond of human relations by alien economic and power interests.”<sup>32</sup> Colquhoun interprets this as the attempt to preserve a regional essence that is seen to be in mortal danger and to uphold the qualities of local culture against the universalizing and rationalizing forces of civilization.

The second meaning of the word “critical”, according to Colquhoun, is to create resistance against the nostalgic return to the past that occurs when regional elements are removed from their natural contexts. This removal of regional elements from their natural contexts helps defamiliarize the elements and create an effect of estrangement. In essence, this can be interpreted as using elements from the past which are valid today without their original contexts, thus helping filter out nostalgia associated with the elements used, while using the isolated elements only due to their validity in contemporary society. Hence, the fundamental strategy of *Critical Regionalism*, in addition to mediating the impact of universal civilization with local culture, is to use elements brought out of the peculiarities derived “indirectly” from a particular place.

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<sup>30</sup> Quoted from Frampton, Kenneth. “Towards a Critical Regionalism: Six Points for an Architecture of Resistance” in Foster, Hal (ed.). *The Anti-Aesthetic: Essays in the Postmodern Culture*. Seattle, Washington: Bay Press, 1983, p.20.

To achieve *Critical Regionalism*, Frampton says, it is necessary to identify the local “school” of thought prevalent in that region. This consideration is from an institutional standpoint. The term “school” refers to a locally cultivated cultural school of thought. Sanjeev Sharma has interpreted the idea of “school” as “an area which has common cultural binding in terms of language, social customs, lifestyle, etc.”<sup>33</sup> Frampton adds that an architectural school as a “pedagogical and cultural institution” can be a vehicle to further the cultivation of *Critical Regionalism* and can be, at the same time, representative of the local school of architectural thought. But, Frampton says, this school should be able to recreate a rooted tradition while incorporating foreign influences at the level of culture and civilization. In this sense, *Critical Regionalism* is dependent upon the connection between the political consciousness of society and the architectural profession within it. Regional schools should represent and serve the limited constituencies in which they are grounded. *Critical Regionalism* calls upon these schools to cultivate images meaningful to the local society. This is in contrast to the prevalent practice of using meaningless alien images in a building merely due to their “exotic” value.

Simultaneously, *Critical Regionalism* calls for a connection with universal civilization. Frampton says this can be done by combining the locally cultivated images with alien incorporations which are meaningful to the local society rather than using

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<sup>31</sup> Colquhoun, Alan. “The Concept of Regionalism” in Nalbantoglu, G. B. and Thai, W. C. *Postcolonial Space(s)*. New York: Princeton Architectural Press, 1997.

<sup>32</sup> Ibid.

<sup>33</sup> Sharma, Sanjeev. *An Inquiry into Kenneth Frampton's 'Critical Regionalism': Charles Correa's Gandhi Memorial Museum and Balkrishna Doshi's Gandhi Labour Institute*, M. Arch. Thesis, K.S.U., 1994, p. 39.

meaningless exotic imports. This will help achieve a measured connection of universal civilization to the local culture.

Additionally, *Critical Regionalism* calls for an imposition of a certain limit to the optimizing logic of the industrial and post-industrial society. This idea can be interpreted practically by limiting the use of standardized building components manufactured today, in an attempt at minimizing the impact of the universalizing forces of technology.

To put the above notions in a nut-shell, the interpretation of the idea by Dr. Iftekhar Mazhar Khan may be referred to: "For Kenneth Frampton, 'critical regionalism' is a group of architects representing a regional constituency and like country lawyers, producing architecture for a set regional constituency. For him, they will act as pockets of resistance against the onslaught of value-free internationalism."<sup>34</sup>

Thus, *Critical Regionalism* is about "place creation" and the combat against the "placelessness" and "culturelessness" of an alienating consumerist society. The conditions required for a *Critical Regionalism* include sufficient prosperity, a strong desire for identity and for cultural, economic and political independence. Frampton is of the opinion that in places where cultural and political conditions are absent, like in newly built cities, the formulation of a creative cultural strategy becomes difficult. Thus,

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<sup>34</sup> Khan, Iftekhar M. "Rapporteur" in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 191.

*Critical Regionalism* will flourish, Frampton thinks, in those cultural interstices which are able to escape the universalizing influences of modern civilization.

Frampton cautions against confusing *Critical Regionalism* with vernacularism. But *Critical Regionalism* has a connection to the past. In Western history, *Critical Regionalism* lies between the eras of Neo-Historicism and Neo-Avante-Gardism. Neo-Historicism was said to have a new found faith in complete and strong links with the past. Neo-Avant-Gardism, while recognizing the past, does not subscribe to it, and moves only with an inventive eye towards the future. *Critical Regionalism* lies between these two positions.

### ***The Practice of 'Critical Regionalism'***

Based upon the above arguments, Frampton has evolved a set of criteria which will, he says, lead to realizing a critical regionalist architecture. The following is a compilation of these criteria drawn from all three sources in which the theory of *Critical Regionalism* has appeared. It is a point-by-point postulation of all the criteria.

- (1) *Critical Regionalism* has to do with “place creation” rather than “space creation”. The attention here is given not to the creation of a habitable space, but more to a livable “place” as a congregation of “spaces”. The “place” is intended to be meaningful to and a reflection of the cultural identity of the local society.

(2) *Critical Regionalism* calls for defining a “domain” within which all the following criteria can act. This second criterion has been elaborately explained by Frampton in the essay “Place, Production and Architecture: Towards a Critical Theory of Building”.<sup>35</sup> Standardized technology has often forced architects to build in a way which did not fulfil spatial requirements for healthy living. Frampton gives the example of Peter Cook’s “plug-in city” and the “space-age capsules” proposed by Dennis Crompton, Michael Webb, Warren Chalk and David Greene, which provided “brutally cramped conditions”. They did not address the social and ecological concerns and fell below minimum space standards. The intention was to exploit the land for maximum profit. Real needs were often overlooked in an effort to produce extremely sophisticated, if relatively simple, prototypical components for the rationalized production of built form. Thus all places tended to be the same and did not have any character within themselves. To arrive at a meaningful solution, Frampton thinks, the approach of the architects should be antithetical to the typological design imposed by standardized industrial technology. Each site should be dealt with in relation to its specifics. User participation must be encouraged. There must be an effort at re-establishing the dialectic between building and the public realm, of built organism and the spaces it necessarily creates around itself. In this sense, Frampton subscribes to Aldo Van Eyck’s argument that to achieve “temporal depth”, or “associative perspective”, it is necessary to establish a continuum between the past, present and future. The architect today, should be able to master the means of production rather than submitting to the standardized products of industrialization which dominate architecture. This will help in the production of meaning and the creation of

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<sup>35</sup> Frampton, Kenneth. “Place, Production and Architecture: Towards a Critical Theory of Building” in Frampton, Kenneth. *Modern Architecture and the Critical Present*. London: Architectural Design, 1982.

place. The link, according to Frampton, between production and place will result in a certain “character” which will then give the society a sense of identity. Frampton refers to the writings of Christian Norberg-Schulz to explain that character cannot be separated from the process of making. Thus, the main intention of this criteria is to achieve an architectural identity through the character developed as a consequence of, among other things, the mode of production. But for this character to grow while resisting external influences, it is necessary to establish a “domain” within which it can be nursed. Frampton uses Martin Heidegger’s words to explain what he means—“A space is something that has been made room for, something that is cleared and free, namely within a boundary. . . . A boundary is not that at which something stops, . . . the boundary is that from which something begins its presencing. . . . That for which room is made is always granted and hence is joined, that is gathered, by virtue of a location, that is by such a thing as a bridge. *Accordingly, spaces receive their being from locations and not from space.*” In this case, the “presencing” is the “character” achieved within the domain. Thus, a “domain” (location) has to be defined within a boundary. It could be a physical boundary or symbolic. Frampton gives basic examples like the perimeter block, or an internal space like the atrium, etc. *Critical Regionalism*, therefore, needs a “domain” within which it can be developed.

(3) *Critical Regionalism* asks what the limits of a region are in terms of its institutional status. The region considered from an institutional standpoint has two aspects: discourse and cultivation of a client. Without a client’s cooperation, it will never be possible to create a regional architecture. Discourse means the local “schools” of culture, which may include the ideological strategy of an architectural school of practice in that area.

Through these schools the region can become culturally resistant against the onslaught of universalizing forces. Frampton calls this local discourse, a “myth” of the region. Any “self-consciously created culture” within a region can be called a “myth” of that region.<sup>36</sup> Thus, the “myths” of a region should be manifested through its architecture. This will define the boundary/limits of a region.

(4) *Critical Regionalism* is an architecture that is experiential rather than picturesque. This is in reference to the increasingly photogenic architecture created of late. Frampton proposes an architecture that is experiential in terms of spaces and volumetric configurations, rather than an architecture which only visually communicates (for the camera) a play of spaces.

(5) *Critical Regionalism* is “Topological” rather than “Typological”. The word typology refers to a common form created regardless of the specifics of the site. This should be discouraged and a site-specific architecture should be attempted.

(6) *Critical Regionalism* calls for an architecture that is built in response to its context. It responds sympathetically to the physical fabric within which it is built. A certain conformity with the built environment is called for, to facilitate the creation of an appropriate identity.

(7) *Critical Regionalism* is architectonic rather than scenographic. The word scenographic in this context means that it is representational. The attempt to hide the structure of a building by paint should not be subscribed to. Form and representation

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<sup>36</sup> Frampton, Kenneth. “Ten Points on an Architecture of Regionalism: A Provisional Polemic” in Speck, Lawrence(ed.). Report of the seminar titled “New Regionalism” held at University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*-Vol.3. New York: Rizzoli, 1987, p. 24.

should be true to what is seen, not just in terms of durability and transfer of forces, but it should also respond architectonically to climate and light.

(8) *Critical Regionalism* in architecture calls for buildings that avoid the use of the artificial (air-conditioners) and try to make use of architectural principles for maintaining comfortable conditions within the building. In other words, it is climatically responsive.

(9) *Critical Regionalism* is responsive to the subtle variations of the local light and avoids the use of artificial light where possible.

(10) *Critical Regionalism* is “tactile” as well as visual in experience. The “tactile” here refers to the sensations of heat/cold, humidity, temperature, the aroma of materials used, the sound of our own footfall onto the material, etc. All these sensations should be related to the visual as truly as possible. In other words, a building should not just be visually appealing, it must also complement this visual appeal with truthful multi-sensorial perception.

(11) The intention of *Critical Regionalism* is to respond to the “world culture” while maintaining its rootedness in the peculiarities of the local place. *Critical Regionalism* will, therefore, on occasions, insert reinterpreted vernacular elements as disjunctive episodes within the whole. These elements may be derived from foreign sources to convey the “world culture” which *Critical regionalism* proposes.



## CHAPTER IV

### THE EASTERN PERSPECTIVE

To understand the issue of regionalism in architecture from the Eastern point of view, it is necessary to discuss the historical reality of the East in general. Specific attention is given to the situation in India, as this thesis's focus is on that country. The discussion in this section aims at identifying the present day realities of the East, which may be said to be distinctive from those in the West, and the reasons why regionalism is an issue in the East. Various theoretical attempts at addressing these realities are also considered.

As discussed earlier in this thesis, the Colonial legacy in India attempted to obliterate the traditions and styles of the past architecture of India. And although attempts were made, towards the end of the nineteenth century, to hybridize the Colonial style with the then "Indian" architecture, the process was predominantly Western. According to Tillotson, due to this, the tradition of Indian craftsmen was on the decline, resulting in a situation which threatened the continuation of the architectural traditions of the past<sup>1</sup>.

"After 1947, the whole of the Indian subcontinent faced a crisis due to the almost total absence of architects. . . . The few architects who were practicing were trained in England, and the English education system had nothing to do with the Indian

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<sup>1</sup> Tillotson, G.H.R. *The Tradition of Indian Architecture: Continuity, Controversy and Change Since 1850*, New Haven and London: Yale University Press, 1989.

culture.” This statement, from a paper titled “Introducing Bangladesh—A Case for Regionalism”,<sup>2</sup> presented in 1985 at the Second Regional Seminar of the series *Exploring Architecture in Islamic Cultures* held at Dhaka, reflects appropriately the condition of the architectural profession after the end of the Second World War. The situation was, by and large, typical of most of the colonized nations of Asia. Thus, the advent of architectural Modernism seemed inevitable due to the changing world structure and the imports of the Western trained local architects, subsequently resulting in a loss of identity in the architecture in most of the colonized Asian nations.

But the adoption of Modernism resulted in a certain dissatisfaction among the people of the countries of the East. According to Tay Kheng Soon, “The worldwide return to religion, conservatism and the search for lasting values reflects a profound dissatisfaction with the fruits of Modernity. . . . Everywhere in the developed cities, people are decrying the loss of identity and the effects of alienation.”<sup>3</sup> Balkrishna Doshi also blames cultural Modernism for the loss of identity. According to him, cultural Modernism, while bringing happiness in material terms, gave a certain freedom which, ironically, is also responsible for a lot of anxiety.

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<sup>2</sup> Muzharul Islam, Kazi Khaleed Ashraf and Saiful Haque. “Introducing Bangladesh—A Case for Regionalism” in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series *Exploring Architecture in Islamic Cultures* convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 26.

<sup>3</sup> Soon, Tay Kheng. “Cultural Identity in Architecture as Perceived from a Singapore Viewpoint” in Powell, Robert (ed.). *Architecture and Identity*--Proceedings of the First Regional Seminar in the series *Exploring Architecture in Islamic Cultures* convened by The Aga Khan Award for Architecture held between July 25 and 27, 1983, at Kuala Lumpur, Malaysia, Singapore: Concept Media, 1983, p. 46.

*"Freedom constantly encourages people to push deeper into the unknown. And the deeper one delves into the unknown, the more one is confronted by it's uncertainties. . . .*

*This exploration of the unknown in modern times warrants cutting one's roots, cutting the umbilical cord of tradition in all walks of life. In the process, the sense of belonging, the sense of identity. . . all these are lost."*<sup>4</sup>

*"Doubly loaded long corridors in apartment buildings, with rooms on both sides, as in hotels and hospitals, made economic sense, but were socially and culturally, a disaster."*<sup>5</sup>

Doshi goes on to lament the loss of identity with place and architecture in India. Subsequently, he proposes a regionalism not just of open spaces, technology or economy, but also in terms of regional cultural heritage and community environment.

Hence, one motivation for the adoption of a regional approach in the East, is the loss of architectural identity due to the effects of Modernism upon the masses. Having tasted Westernization, the Eastern nations, not finding an answer to their dilemma, have begun to take a serious look at their own history and are finding cultural aspects which they have overlooked.<sup>6</sup>

Secondly, according to Powell and Ozkan, the technological inferiority of the East has been equated with cultural inferiority. "This syndrome enabled the

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<sup>4</sup> Doshi, Balkrishna V. "Social Institutions and a Sense of Place" in Ameen, Farooq (ed.). *MARG: A Magazine of the Arts*, Vol. 48, No. 3, Mumbai: Marg Publications, March, 1997, p.13.

<sup>5</sup> Ibid., p.15.

<sup>6</sup> Powell, Robert and Ozkan, Suha. "A Taxonomy of Regionalism" in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*, Singapore: Landmark Books, 1989, p. 11.

technologically superior Western cultures to wield influence over everything. Thus, it is essential that a new attitude be engendered to disassociate technological inferiority, which is a fact, and cultural inferiority, which is an opinion.”<sup>7</sup> Thus the attempt of many Eastern countries, it seems, is to break the hegemony of the Western world while asserting their independent cultural development.

The third reason for the search for a regional identity in the East is the “vacuum” created after architectural Modernism collapsed in the West. This crisis led many Western architects to advocate several diverse directions in the search for a permanence in architectural direction, thus leaving no concrete path for the East to follow as had been the case with Modernism.

Thus, it seems that the reasons for the search for a regional identity in the Eastern nations are not the same as those in the West. The Eastern nations are attempting to maintain or regain their cultural identity while trying to break the technological and economic hegemony of the West. Due to these differences, the methods and approaches of the regional practice in architecture in the East and the West may vary accordingly.

### **THE EASTERN CONDITION**

Due to the reasons established above, architects and theoreticians in the East have proposed various arguments about how to achieve a regional architecture that

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<sup>7</sup> Powell, Robert and Ozkan, Suha. “A Taxonomy of Regionalism” in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*, Singapore: Landmark Books, 1989, p. 10.

addresses the realities of the East. The seminar titled *Regionalism in Architecture*,<sup>8</sup> the second in its series *Exploring Architecture in Islamic Cultures*, convened by The Aga Khan Award for Architecture in Dhaka, Bangladesh, in 1985 gave a platform for these proposals to be discussed. The various viewpoints proposed are summarily discussed below. The text is intermingled, where necessary, with historical facts to give a better understanding of the ideas expressed.

It must be mentioned here that throughout the seminar in Dhaka, the underlying assumption was that the past must be built upon. This assumption forms a component of almost every speaker's definition of the term "Regionalism", whether explicitly stated or not. The struggle seems to be that of how to connect the pre-colonial past with today.

The seminar was divided into four sessions, namely- "Background", "Regionalism in Architecture", "Architect-Government Relations", and "The Architect and the Changing Environment". The "Background" session traced the architectural developments in Bangladesh and identified a case for regionalism by discussing the historical progression of architecture in that country. The situation in Bangladesh is similar to that in India. Bangladesh broke away from Pakistan in 1971, after being a part of that country from 1947 onward. The period from 1947 to 1971 saw the first batch of architects trained in the Western method of education. The training was done in a school

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<sup>8</sup> See Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series *Exploring Architecture in Islamic Cultures* convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985.

started by Americans<sup>9</sup>. Within this period, Louis Kahn built the Capital Complex, and Paul Rudolf built an Agricultural University. (This was similar to the Indian situation in which Le Corbusier was called upon to design the city of Chandigarh). Thus, the process of severance of ties with the past, in the architectural progression, was complete. The process started with the invasion of the British in 1757. At the time of the departure of the British, not a single local architect existed.<sup>10</sup> The architects trained in the Bangladesh school started by Americans had nothing to do with the local culture. The import of Modern Western architecture filled the void, but with something completely foreign.

The session of the seminar which is most relevant to this thesis is the second session titled “Regionalism in Architecture”. The ideas expressed in this session can be divided into two parts—theoretical proposals aimed towards achieving an architecture of the region, and case studies or demonstrations of existing architectural practices. The theoretical proposals mainly consisted of ideological arguments.

One of these ideas proposes a rethinking of the ties of the Eastern nations with the West, and addresses the logic of Modernism as it relates to consciousness.<sup>11</sup> This idea is proposed by Romi Khosla, a theoretician and practicing architect in New Delhi. According to Khosla, the logic of modern scientific thought was laid by, among

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<sup>9</sup> Islam, Ashraf & Haque. “Background: Introducing Bangladesh—A Case for Regionalism” in Powell, Robert (ed.). *Regionalism in Architecture--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures* convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, pp. 23-26.

<sup>10</sup> Ibid.

<sup>11</sup> Khosla, Romi. “Crashing Through Western Modernism into Asian Reality”, in Powell, Robert (ed.). *Regionalism in Architecture--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures* convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, pp. 58-59.

others, Rene Descartes and Francis Bacon. Descartes simply rejected all knowledge which was merely probable and proposed that only those phenomena which are perfectly known and about which there is no doubt, should be believed. He set out to re-build the whole basis of knowledge on deduction. This type of thought process was alien to Asian thought. He proposes to “crack the shell” of a Western mode of thinking by overcoming two problems: (1) the complex of being an Oriental, and (2) the fragmenting of our intellect along Cartesian lines.

According to Khosla, the Orient, in the mind of the West, is a secondary source for the production of culture, knowledge and scholarship. The Asian willingly lets himself be directed in this manner. This is what Khosla calls the “Oriental Complex”. The result is a vast standardization of taste in the Orient, in terms of contemporary architecture, which, Khosla thinks, is a poor version of the exports from the West. The new generation of the West is being fed with memories of the “glorious” days of the British Raj in the form of films, pulp literature and even books on architecture. Khosla cites examples of films like “Jewel in the Crown” and “Passage to India”, and of books like “Splendours of the Raj”, “Stones of Empire” and “A Fatal Friendship”, to prove his point. Thus, Khosla says, “the intellectuals of the Orient will have to wrest themselves away from this dilapidated 19<sup>th</sup> century image of themselves and their work and break away from the ‘Oriental Complex’.”<sup>12</sup> This change in self-perception will open a new uncharted area of opportunity for the Asian intellectual.

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<sup>12</sup> Khosla, Romi. “Crashing Through Western Modernism into Asian Reality”, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 58.

Khosla speaks of recent developments in Particle Physics which imply that what we observe, may not necessarily be true to what Particle Physics interprets that observation to be. This, according to Khosla, means that what we see and observe in our everyday life may well be an illusion of our perceptions and brains. Such developments in science and epistemology, he believes, will assist the Asian intellectual in breaking away from the Oriental Complex.

As regards the “Descartes” syndrome, Khosla compares the “Descartesian” perception of space prevalent in the West, with the Asian perception. According to him, “The Asian is used to looking at architecture as a form that lends itself to layers of interpretation and symbolism. He views it as he does the rest of the iconography of his culture. Asians are concerned with the consciousness embodied in the work rather than the idea of it. Myths, symbols and reality are interwoven and historical facts are just one aspect of truth. Whether mythical characters existed in real life or not is not relevant at all because it is their symbolic existence that is important and not the proof of their physical existence.”<sup>13</sup> This seems to mean that the Asian mind sees architecture not as an individual idea, but as a form that has layers of meaning and symbolism associated with history. As against this, the Western perception of space, Khosla says, is judged by its truth to the diagram of function and environment and not by its impact on the human consciousness. Clarity of space and intellectual rationality are more important to the Western mind than symbolic meaning.

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<sup>13</sup> Khosla, Romi. “Crashing Through Western Modernism into Asian Reality”, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 59.



Throughout this century, Khosla says, the Asian architects have been pressured by European rationalist thought. The result is that Asian architects have lost the instinctive feeling required to produce work in their pluralistic cultures. But, Khosla thinks that the Asian mind has not been “rolled flat by the hot roller of Cartesian thought” and so, reacts differently to architecture. He proposes an architecture of consciousness, rather than the intellect. Consciousness is in a constant state of re-adjustment in the realm of time. Such a state of constant re-adjustment will result in a building being an expression at that given moment of the time of that consciousness. The architect should move backward and forward in time and should be able to assimilate foreign influences within his work. Each building will, therefore, present a different centre of experience. The individual ego of the architect will be renounced. Khosla takes solace in the claim that the Asian civilizations have assimilated influences for centuries, and so, the present phenomenon of Cartesian thought should be assimilated in our culture, rather than be replaced by it.

Uttam C. Jain, an architect based in Mumbai (formerly Bombay) provided another interesting viewpoint. He proposed an architecture based upon the metabolic functions of Man. Jain is of the opinion that shelter is a global need, and yet its form and content respond to a given place, climate and time.

*“For Man's sustenance, not only is it desirable, but imperative that the biological functions of the human body continue normally. Efforts to protect the body must inevitably be orchestrated to the rhythm of the body's metabolism. . .*

*In a hot dry climate, if the body is able to dissipate to its immediate surroundings, all the undesirable heat it receives, it experiences comfort. In a modified environment, gain or loss of heat beyond comfort level to the immediate surroundings, will not only depend on the air temperature of the interior and exterior, the mean radiant temperature, humidity and air currents, but also on clothing, physical activity, actual state of health, food consumed, age and mental status or psychological attitude at any given time. . . . Designing Man-made shelter that takes into account the process of heat gain in warmer climates should be subscribed to. . . . Mechanisms of maintaining comfortable temperature levels differ and depend on extraneous factors, but some universal rules apply and the response to climatic conditions, whether in a hot or cold region, is a major determinant, along with human activities, of human habitat.”<sup>14</sup>*

According to Jain, there exists an umbilical cord between Man and his natural surroundings. He proposes a harmony with nature and explains this relationship through an equation developed by Tapio Periainen, the then Director of the Finnish Society of Craft and Design. This equation establishes a relation between the development of humanity and its alliance with nature. If the ratio of Nature to Man is in balance, i.e. if Man's activities are in a state of equilibrium with Nature, then the numerical value of the equation is “1”. If Nature dominates (with Man's consent), i.e. if this ratio has values of “2” or more, then the equation is progressive. But if, Man takes the lead and tries to subdue or displace Nature, then the expression tends toward zero (0.9, 0.8, 0.7, . . . 0.000n). This is a warning signal for Man, since Man cannot survive isolated from Nature.

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<sup>14</sup> Jain, Uttam C. “Regionalism—Resource for Identity” in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 46.

Thus, Jain proposes the use of materials from nature —mud, brick, stone, thatch, etc. whether it is a mansion or a hut that is being built. This instantaneously makes the building part of the landscape. The forms arise from the time-tested folk wisdom that is deeply rooted in society. The use of indigenous materials has advantages such as the promotion of self-reliance, energy savings, low production costs and minimum transportation costs. Using local building crafts creates a sense of participation and kinship amongst community members. Jain also sees this as a method by which local human potential is boosted to the brim. Within the context of India, Jain sees this as a “boon” of sorts. It may help reduce the high volume of migration from the rural to urban areas due to the resultant employment opportunities. This may result in the growth of the local market sector.

Essentially, Jain argues for a continuation of the tattered thread of history and tradition, which he thinks will also address contemporary problems with relation to employment and related migration. It must be noted that this continuation with the past ignores the British era. It seems, therefore, that the rationality of historical application is more important to Jain, rather than a sequential progression of history. The 5000 years of history, which he says India has, has resulted in a healthy adaptation of Man to his surroundings. Jain believes in local wisdom and does not subscribe to any foreign influences, not even Modernism in architecture.

On the other hand, Balkrishna Doshi proposes an incorporation of Modern architecture while calling for an architecture based upon local socio-cultural patterns.<sup>15</sup> But he blames the culture of Modernism for the loss of architectural continuity.

*“Unfortunately, during the last two centuries, our concepts and life-styles have undergone considerable changes. Initially, it was the internal strife, then the foreign rule, then the destruction of small-scale home based crafts which affected the nature of the social pattern. Subsequent emphasis on industrialization, the advent of new building materials, and a desire to ‘modernise’ gave rise to different patterns of building and community-city planning. The models for such development were neither conceived on the basis of our climate, nor social needs, nor life-style, nor did they incorporate the attributes of the process mentioned earlier. The consequence was an increased use of resources, of energy and subsequent degradation of the environment. . . .*

*All this is occurring in the villages, towns and cities, which have a rich cultural heritage. What we constantly realize is the apparent contradiction between what we had and what we have now. Thus, we live in an atmosphere of contradictions because, we like what we had, but do not yet know well how to improve the present and ensure a better future.”<sup>16</sup>*

Doshi puts forth his understanding of what the Indian situation was over prior centuries. In the traditional Indian society, one is not alone, but always a part of the community. This brings about a sense of security while allowing wide choices. This is reflected in buildings also. Buildings did not exist in isolation, but always in groups leading to a total environment. The community shared everything, whether a festival or

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<sup>15</sup> Doshi, Balkrishna V. “Cultural Continuum and Regional Identity in Architecture”, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, pp. 87-91.

<sup>16</sup> Ibid., pp.87-88.

an economic activity. According to Doshi, it is necessary to understand this about traditional Indian society, before designing any space for India today.

Doshi proposes that the socio-cultural patterns should first be identified. An example could be that of a village well. The well is an institution which binds a community very strongly, since it is the meeting place of the community on a daily basis. The temple is another very strong institution around which community life revolves. Such institutions should be identified and understood, and architecture and design should be based upon this understanding. These institutions were permanent, and lasted for generations due to the organizational structure evolved to run them. Today, according to Doshi, institutions are associated with individuals, and are, therefore, not able to sustain themselves for as long as those of the past.

Despite this inclination toward the past, Doshi favours the use of modern technology to achieve his goals and does not disregard Modern architecture. He proposes to merge modern technology with a Modern architecture derived on the basis of socio-cultural patterns within a society.

The issue of the Western methods of architectural education is an often cited cause for the loss of identity in the architecture of the East. Several participants expressed concern over the inappropriateness of this method of education. Kamil Khan Mumtaz, a Pakistani architect, laments the fact that in the search FOR a regional

architecture, the architecture OF the region was ignored.<sup>17</sup> He joins Islam, Ashraf and Haque from Bangladesh in criticizing the Western methods of architectural education prevalent in that part of the world. Also, the absence of a firm theoretical base related to cultural realities of the region contributes to the lack of innovation.

Mumtaz also is critical of the lack of patronage to whatever craftsmanship remains in the region. He sees hope in the fact that despite the apparent “westernization” of architecture, below the surface of the society in some Eastern regions, there exist “more dominant aspects of our cultures: traditional values, concepts, social relations and patterns of behaviour”. He calls for a link between local craftsmen and architects, wherein the latter would provide the theoretical base, and the former, a connection to the past and the present of the society through their traditional occupations. To achieve this, Mumtaz proposes a thorough revamp in the educational system. This proposal includes close interaction of the architects and craftsmen beginning in the architecture school, which is not based upon the Western model of studio assignments, but upon actual site work.

The remainder of the seminar consisted of case studies or demonstrations of the prevailing types of architectural practice and brought forth the multi-faceted aspects of architecture in some Eastern countries. It is adequately demonstrated that in some countries, architectural vernacularism is still prevalent as it existed during the

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<sup>17</sup> Mumtaz, Kamil Khan. “A Case for Indigenous Development”, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, pp. 55-57.

colonial era. Several case studies proved that this type of vernacular architecture is determined by socio-cultural factors in a society. It constitutes a very large proportion of the built environment in many Eastern nations.

But the modern imports of planning and architecture have resulted, on some occasions, in a culturally disruptive environment for a community. "Liveability in Old Dhaka: Evolving Residential Patterns in Mohallas",<sup>18</sup> a paper submitted by Dr. Iftekhar Mazhar Khan, traces the close relation between house and land in the old city of Dhaka. This relationship is based upon cultural aspects and furthers the residents' ties in society. But the redevelopment scheme proposed by the government in the area has resulted in sub-divisions which militate against cultural values, and tend to destroy community life. Dr. Khan fears that eventually, such a scheme will transform the area into a slum. The paper clearly highlights the antithetical nature of traditional settlements and "modern" planning. This issue also relates to the question of an appropriate system of architectural education, about which much has already been said. This situation is typical of most Eastern nations, and poses a problem about which something must be done.

Another important aspect of the Eastern nations is the prevalence of building activity done by people without hiring architects. Abu H. Imamuddin, Shamim Ara Hassan and Debashir Sarkar of Bangladesh demonstrated the prevalence of such

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<sup>18</sup> Khan, I. M. "Liveability in Old Dhaka: Evolving Residential Patterns in Mohallas" in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985.

building activity by a community as a group in their paper “Community Mosque—A Symbol for Society”<sup>19</sup>. The lay people in many Eastern nations take the task of building onto themselves. This task of building without an architect is very widely practiced in many Eastern nations and is a reality of the East. The practice, typical in many Eastern nations, encompasses a wide variety of building types. The authors have also demonstrated how such an activity fosters community spirit and strengthens the role of religion in the lives of the lay person in the East.

The ideas discussed above cover the main themes of the second session of the seminar. The third session highlights the role of the governments of the Eastern nations in creating the built environment. This is significant due to the fact that the government of many nations in the East is the largest client/builder. This session focussed primarily on Bangladesh. But the issues brought out are similar in many other nations of the East. In Bangladesh, the government, while attempting to deal with the “larger” issues of economics, housing, education, etc., is not responsive, on many occasions, to aspects of architecture such as contextuality to the existing natural and built environment. It tends to concentrate on providing shelter—whether it is socio-culturally suitable to the occupants or not. On many occasions, the government refuses to accept the importance of conformity of the built environment to its surroundings and to the society it intends to house. Some participants in the seminar were of the opinion that this attitude interfered with their attempts at creating a “regional” architecture on a large scale. The activities of

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<sup>19</sup> Imamuddin, A. H., Hassan, S. A., Sarkar, D. “Community Mosque—A Symbol for Society” in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985.



the government tended to destroy the existing environment as well, by erecting insensitive and out-of-context buildings.

The seminar seemed to provoke mixed reactions. Dr. Iftekhar Mazhar Khan, who provided the concluding critique, laments the fact that while conceptually the validity of the concept of regional architecture was never questioned and was seen as an inevitability in this region, no agreed upon definition of the term “Regionalism” was arrived at. But, as Dr. Khan also observed, it seems that a precise definition could not be attached to the term “Regionalism”. He thought the discussions suffered from a lack of precision. Debates ended without giving a direction towards workable, evaluative methods to measure and design present-day buildings.

### **General Observations of the Eastern Condition**

Despite these deficiencies, the seminar brought to light several important observations with relation to architecture in the East. A summary of these observations is presented below.

- The seminar raised the issue of buildings built by people and not by architects. This type of architecture is what may be termed “vernacular”. The volume of such building activity is indeed very large in the East, as compared to what it is known to be in the West. One need only look at books such as Paul Oliver’s *Shelter, Sign and Symbol*<sup>20</sup>, and

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<sup>20</sup> Oliver, Paul(ed.). *Shelter, Sign and Symbol*. London: Barrie & Jenkins Ltd. 1975.

Bernard Rudofsky's *Architecture Without Architects*<sup>21</sup>, to see how with the invocation of the term “vernacular”, the so-called developing nations come to mind. This thought is accepted by Rudofsky, when, in the beginning of his book *Architecture Without Architects*, he says, “The exhibition is polemic, as it compares, by implication, the serenity of architecture in the so-called developing countries, with the architectural blight of the industrial nations”(p.3). As against this type of building activity, is the environment built by “architects”, i.e. those who have received formal education in an institution which usually teaches predominantly Western methods and techniques.

Thus, we see two groups responsible for the creation of the built environment—the local people and craftsmen, and the formally trained architects. It may be argued that, as mentioned above, the government forms the third group in addition to the two identified. But the government hires architects, i.e. part of the second group, either as employees, or on contract, to do its work. Hence, for our purpose, the government can be classified within the second group. This duality in architectural production seems to be a common characteristic of most of the Eastern nations.

- The second characteristic is that the societies in the East are almost always steeped in history and tradition. This history and tradition has, on many occasions, remained untouched by the colonial period. The only explanation for this is provided by Romi

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<sup>21</sup> Rudofsky, Bernard. *Architecture Without Architects: An Introduction to Non-Pedigreed Architecture*. New York: The Museum of Modern Art, 1964.

Khosla in the seminar held in Dhaka. “The presence of the Buddhists, Hindus and Muslims in this part of the world was very different because they came down to settle here and they were assimilated. . . . The British period is referred to as the colonizing period because it was the result of a metropolitan culture which was located very far from here, and which was using the Asian countries for extracting resources and for marketing their products. . . . I don’t think there is a chance of assimilation then.”<sup>22</sup> Thus, the culture of the British was not assimilated within the mainstream Indian culture. The British always remained foreign to the locals. Hence, the people’s connection to the past does not seem to include the British period.

- Despite the fact that the British culture was not assimilated within the mainstream, the other foreign import, namely Modernist architecture, is accepted. Several authors spoke of using technology and modern materials, but rejected that property of Modernism which proposes to break links with the past. The tools of modernity, many said, should be incorporated into the mainstream culture of architectural design. What is rejected is the International Style. Suha Ozkan was of the opinion that architectural Modernism demands respect for the inherent qualities of building materials, expressiveness for structure, functional justification of form, and so on. These values do not militate against regionalism. Architectural Modernism also provides the tools and techniques to achieve

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<sup>22</sup> Romi Khosla in “Session IV—Panel Discussion, chaired by Raj Rewal”, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 146.

meaning and content under specific conditions.<sup>23</sup> Hence, the intention is to use the tools of Modern architecture while maintaining a strong cultural link with the past.

- The final observation was with relation to the local vernacular built by the people and the imported concepts of Western architecture by virtue of the Western methods in architectural training. This latter type of education, according to Iftekhar Mazhar Khan, has an urban bias. Thus, the largest proportion of the built environment designed by architects is usually found in the urban areas and has a Western inclination to it.<sup>24</sup> As against this, the rural buildings are mainly built by the people themselves. The latter forms the major portion of the built environment in many Eastern nations.

Some other general observations bring to light the inherent difficulties faced by many Eastern nations. The issue of the role of the government has already been discussed. Since the government in some of the Eastern nations is the biggest property developer, it becomes the responsibility of the government to build sensitively. In Bangladesh, the government does not address the local issue while making buildings. The result is that the attempts made by architects, other than those employed by the government, get overpowered by the massive construction activity done by the government.

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<sup>23</sup> Ozkan, Suha. *Introduction: Regionalism Within Modernism*, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 12.

Some factors which determine the built environment in the East may not play a role in the West. The seminar highlighted religion and its role in shaping architecture, as one such factor. This is especially true in Islamic nations, but is also visible in other nations like India, Sri Lanka and other countries in South-East Asia.

It is observed that the concepts of architectural Modernism, especially with relation to planning, do not, on many occasions, mix well with traditional practices. This problem poses a dilemma to architects of today in the East, since due to their Western training, they are unable to address effectively the merger of traditional practices with modern architectural practices. According to some of the participants in the seminar, the Western education system in architecture, is inappropriate and should, therefore, be modified. But some architects have argued that Modern architecture is inevitable and so, should be assimilated. But the fact remains that today's architect, whether trained in traditional architecture or modern, has to address both the realms.

The attempts to create architecture in the countries with limited resources is a very big and complicated problem. In Bangladesh, for example, bamboo has been used extensively for building. It was readily available and the locals did not have to purchase it. It was there to be used by all. The government, however, is now using bamboo to make paper. The locals are, therefore, left with only brick to be used for construction purposes. Brick is a manufactured product and needs to be purchased.

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<sup>24</sup> Khan, Iftekhar M. *Rapporteur*, Ibid., p. 192.

People in this society fight for survival on a daily basis and it is usually beyond their means to purchase bricks to make a house. If a person is able to purchase bricks, he or she has to use it to its maximum potential and create a space within the limited stock he or she was able to purchase. This results in the creation of very small spaces which are most often unsuitable and inadequate. This is an example of the problems faced by the people in some countries in the East.

### **Design and Construction Processes in the Eastern Regional Practice**

The issues discussed so far are representative of the Eastern perspective and form the basis of a systematic categorization of the many strands of regionalism prevalent in the East. It may also be important to address the questions related to the design and construction processes, since these processes determine the nature of the architecture in the East. Suha Ozkan has attempted such a categorization of the many regional strands of architecture based upon the processes used in their making. In a paper presented in the seminar at Dhaka—"Introduction: Regionalism Within Modernism",<sup>25</sup> he put forth his classification in the form of a text. Following this paper, he further refined his classification in the form of a taxonomy (co-authored by Robert Powell), which was published in a book titled *Ken Yeang: Rethinking the Environmental Filter*<sup>26</sup> in 1989. The expanded version of Ozkan and Powell's taxonomy includes the components which make

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<sup>25</sup> Ozkan, Suha. *Introduction: Regionalism Within Modernism*, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, pp.8-16.

<sup>26</sup> Powell, Robert and Ozkan, Suha. "A Taxonomy of Regionalism" in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*, Singapore: Landmark Books, 1989.

up the process of architecture in the East. In devising the *Revised Taxonomy* for this thesis, these components were considered. These are categorized into four broad topics:

### ***The Mode of Production***

- Indigenous craftsman
- Master mason
- Architecture/contractor

### ***The Client/User***

- Indigenous population
- Tourist
- Institution, etc.

### ***The Construction Technology***

- Low energy – self help
- High technology

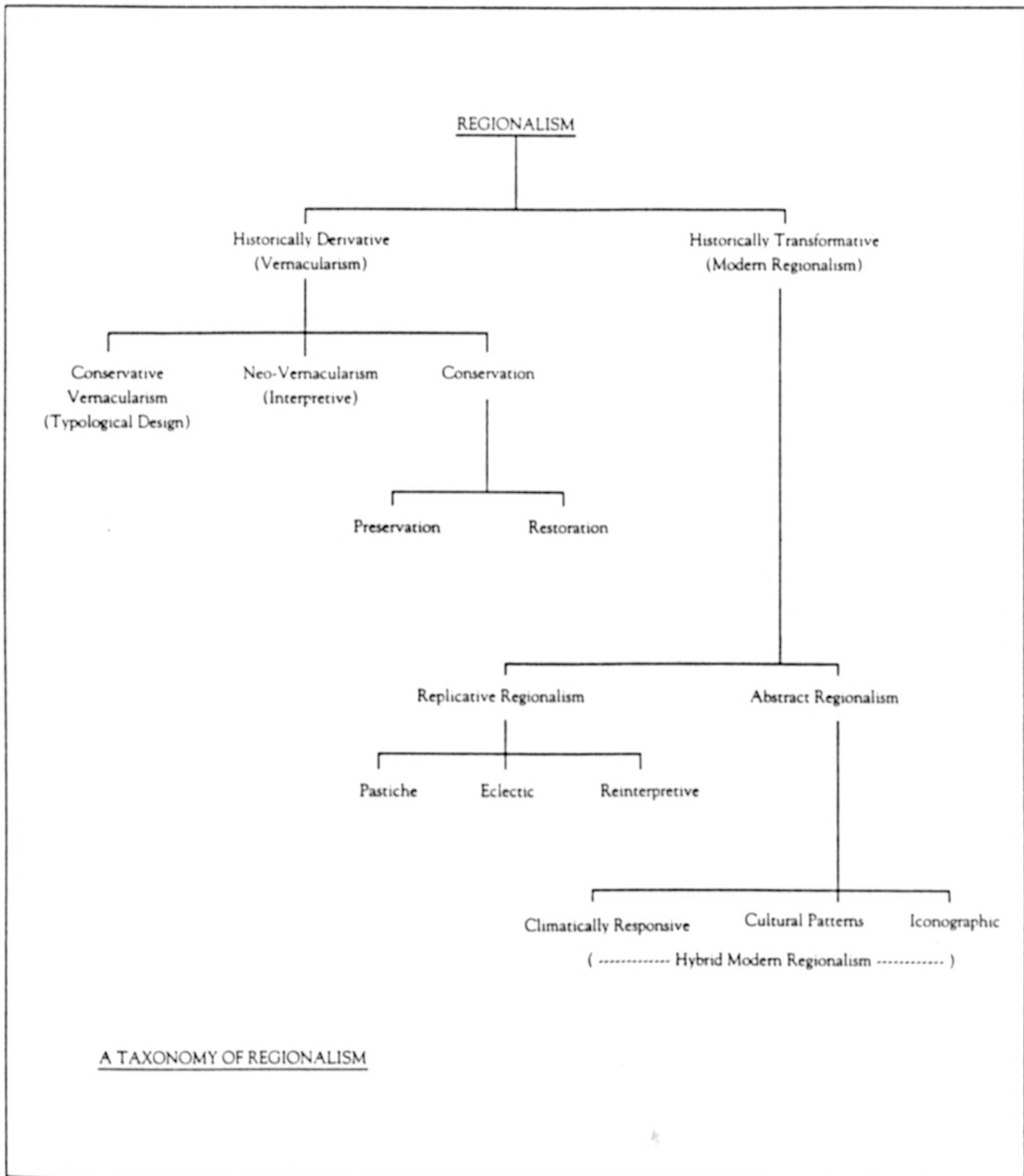
### ***The Materials***

- Attap, bamboo, mud
- Brick, concrete
- Steel, glass, etc.

On the following page is a reproduction of the taxonomy devised by Ozkan and Powell.<sup>27</sup> The authors' intention behind the compilation of the taxonomy is to demonstrate the multifaceted nature of the definition of region based on the understanding that a region represents a complex amalgamation of the many aspects of the culture and environment of a society.

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<sup>27</sup> Powell, Robert and Ozkan, Suha. "A Taxonomy of Regionalism" in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*, Singapore: Landmark Books, 1989, p. 13.



<sup>28</sup> Powell, Robert and Ozkan, Suha. "A Taxonomy of Regionalism" in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*, Singapore: Landmark Books, 1989, p. 13.



Ozkan and Powell's taxonomy discusses broadly two main directions of architectural practice: the "Historically Derivative" ( also called "Vernacular" by the two authors) and "Historically Transformative" (also called "Modern Regionalism" by the two authors). The former can be subdivided into "Conservative Vernacular" and "Neo-Vernacular". "Conservation" of existing vernacular architecture is also included in this category. The broad category of "Vernacular", Powell and Ozkan say, encourages the use of basic elements of design such as climate control, technology, and culture-related symbolism, which have existed and matured over centuries of human existence. When this type of design encourages the members of a culture to build by the conventions of traditional craftsmanship, a fixed "typological" design emerges. This is known as "Conservative Vernacular" regionalism.

"Neo-Vernacular", on the other hand, has emerged as an approach to bringing a new life to the Vernacular heritage for contemporary functions. New and contemporary functions, in this case, means functions which did not exist before today and so, the form of another type of building may be "interpreted" to fit a new function. An example of this would be tourism related buildings. These two sub-categories differ from each other mainly at the level of the user, labour for building, materials used and the construction technology employed. However, according to the authors, this mode of design has limited applications, especially in a large building like a high rise office building. In such a case, the relevance is limited, unless a reinterpretation is made, or what has existed, is stretched.

The other main approach in Ozkan and Powell's taxonomy is the "Historically Transformative" approach. Also called "Modern Regionalism", this is essentially a movement against the uncritical adoption of the International Style. According to Ozkan, Internationalism demands the reduction of the building to skin and bones and seeks global relevance for its existence. Modern architecture, of which Internationalism is only one part, stresses the need for bringing out the inherent qualities of materials, functional justification of form, expressiveness of structure, and so on. Thus, according to Ozkan, Modernism does not militate against Regionalism. "Modern Regionalism" is derived from monumental architecture of the past as well as the civil architecture which constitutes the "Vernacular". From this point of view, "Modern Regionalism" is broadly encompassing. It is subdivided into the "Abstract" and "Replicative" types (in the paper presented by Ozkan at the seminar in Dhaka, "Replicative Regionalism" is called "Concrete Regionalism") types. This latter type covers three approaches—"Reinterpretation", "Pastiche" and "Eclectic". "Replicative Regionalism" copies features and fragments of buildings or even entire buildings. A contemporary treatment in the form, function or materials and technology, is accepted within this mode.

"Abstract Regionalism" is said to be widely practiced in most of Asia. In this approach, abstracting elements or cultural patterns from the past are used to derive building forms. It is said to be the "richest" sub-theme of regionalism and most relevant to rapidly industrializing nations seeking both the benefits of Modern architecture, and the re-establishment of links with their cultural heritage. The abstracting

elements/qualities mainly relate to the region's built heritage—the massing, proportions, pattern of solids and voids, use of light, sense of place and structural principles. According to the authors, this type of regionalism goes beyond mere reinterpretation of past patterns. It is *transformative* of the past into a contemporary and regionally appropriate Modern architecture. An attempt is made to define, in terms of architectural elements, the prevalent culture of a region. “Abstract Regionalism” is a symbiosis between universal values and regional culture. This category is sub-divided into three types—“Climatically Responsive”, “Cultural Patterns” and “Iconographic”.

Hence, essentially, while “Modern Regionalism” (“Historically Transformative”) constitutes the architect-design environment, “Vernacularism” (“Historically Derivative”) describes the architecture of the people. Both these main categories are based upon history. While “Vernacularism” is based upon tradition, “Modern Regionalism” links the past to the present. “Tradition” here means the 5000 year old progression of culture with its assimilations. Hence, these categories respond to the first two generalities of the East discussed in the previous pages of this chapter—that of the link with tradition (disregarding the British era), and that of incorporating architectural Modernism, while rejecting Internationalism. Also, since “Modern Regionalism” is mainly practiced by architects, and has no room for the lay person in the design, it may, therefore, be limited to the urban areas. This observation addresses the other two general observations identified as regards the East. Overall, we see that the *Taxonomy of Regionalism* addresses the four general observations of the East, identified

in the previous pages of this chapter. Ozkan and Powell's *Taxonomy* may, therefore, be said to be representative of the East as it is responsive to the realities of the East.

## CHAPTER V

### THE EAST-WEST POLARITY

After having discussed the issue of regionalism in architecture from the points of view of the East and the West, we see that the issues of the West differ significantly from those in the East. The first difference is that the East, in its search for contemporary identity, prefers strong links with history and does not see a regional architecture without history in it. The West, on the other hand, sees history as an option. Moreover, replicative vernacular design is not an option in the West as it is in the East.

Also, unlike in the East, the culture of Modernism is not an issue in the West. Technology is inherent to its culture and therefore, its use is taken for granted. There is no distinction between the Vernacular and Modern Regionalism, as exists in the East. The East is characterized by the invasion of another culture in the form of Modernism and advanced machine technology. History, and Modernism and technology, constitute two distinct realms in the East. Thus the East, it seems, has to create a dialogue between its history and the culture of Modernism. The West does not have to indulge in such a dialogue, but has to address the issue of whether where it is headed is appropriate or not. Where the West goes is significant for the East, as this will provide a choice for the Eastern nations as well.

In addition to the above observations, the East is largely characterized by an architectural education system which teaches the architecture of the Modern era.

Traditional methods of design and construction, and forms and types of vernacular architecture are no longer taught in architectural schools. This makes it difficult to create a dialogue between vernacular and modern architecture. In addition, the low importance given to establishing a theoretical base for design in the East leads to a situation in which few attempts are made to define the direction of architectural progress. In such a situation, external influences are easily absorbed as inevitable due to the absence of a resistant ideology. This is not so in the West where concrete attempts are made to define the direction of architectural progress. Along with this, as mentioned earlier, the West does not have to grapple with an inappropriate education system, although it might have different inadequacies.

Finally, the issue of the role of the government in architecture is indeed problematic in many nations of the East. As discussed earlier, the government is, in most cases, the largest developer of land and uses methods and technology which may be antithetical to the principles of regionalism. This is not seen in the West as the government is not usually the largest developer.

The above issues summarize certain differences between the East and the West as relates to architectural regionalism. It is important to bear these differences in mind as they are seen to influence the attempts at arriving at a regional architecture.

## THE 'TAXONOMY OF REGIONALISM' AND 'CRITICAL REGIONALISM'

Ozkan and Powell's *Taxonomy of Regionalism* and Kenneth Frampton's theory of *Critical Regionalism*, we have seen, are representative of the differing realities of the East and the West, respectively. Although the ideological basis of the theory of *Critical Regionalism* addresses the architecture of the West, it may be worthwhile to ask whether the theory is so exclusive to the West that it cannot be applied to the East. Sanjeev Sharma, in his Master of Architecture thesis at Kansas State University titled *An Inquiry into Kenneth Frampton's 'Critical Regionalism': Charles Correa's Gandhi Memorial Museum and Balkrishna Doshi's Gandhi Labour Institute*<sup>1</sup>, demonstrates that a modified version of the theory of *Critical Regionalism* can be applied to the architecture of the East.

Similarly, one can ask whether the *Taxonomy of Regionalism*<sup>2</sup> developed by Robert Powell and Suha Ozkan is so exclusive to the East that it cannot accommodate a regional architecture as practiced in the West. Since it has already been established by Sharma that a modified form of *Critical Regionalism* can be practiced in the East, it follows that *Critical Regionalism* may be a valid form of regional practice of architecture in the East. Does the *Taxonomy of Regionalism* therefore, make accommodations for the theory of *Critical Regionalism*? If so, where in the *Taxonomy* can *Critical Regionalism*

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<sup>1</sup> Sharma, Sanjeev. *An Inquiry into Kenneth Frampton's 'Critical Regionalism': Charles Correa's Gandhi Memorial Museum and Balkrishna Doshi's Gandhi Labour Institute*, M. Arch. Thesis, Kansas State University, 1994.

<sup>2</sup> Powell, Robert and Ozkan, Suha. "A Taxonomy of Regionalism" in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*, Singapore: Landmark Books, 1989, p. 13.

be placed? Or does it require its own niche, demonstrating, therefore, an inadequacy of the *Taxonomy*? These are some of the questions which are explored below.

To place the theory of *Critical Regionalism* in the *Taxonomy*, it is first necessary to understand the two main branches of the *Taxonomy* better. Based upon the peculiarities of each main branch, we may be able to identify the branch within which *Critical Regionalism* can be accommodated. The two main branches of the *Taxonomy*, i.e. “Historically Derivative” (Vernacularism) and “Historically Transformative” (Modern Regionalism) have already been described earlier. The effort here will be to understand better the two main branches.

While describing the branch of “Historically Derivative” Regionalism, Suha Ozkan, at the very outset of his paper for the conference on *Regionalism in Architecture*,<sup>3</sup> mentions three books to convey the idea of Historically Derivative Regionalism. These are Bernard Rudofsky’s *Architecture without Architects* (the documentation of a photographic exhibition) and Paul Oliver’s *Shelter and Society*, and *Shelter, Sign and Symbol*. Through his exhibition, Rudofsky brought to light an area of architecture which had been ignored for a very long time—the architecture built by people themselves without hiring architects. Ozkan calls this type of architecture “Vernacularism”. By the mid-seventies, Vernacular architecture had distinguished itself as an important branch of architecture where the basic components of design such as

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<sup>3</sup> Ozkan, Suha. “Introduction: Regionalism Within Modernism” in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985.



climate, technology, culture and related symbolism have existed and matured over centuries in the history of humankind. Paul Oliver's books are said to have laid down the theoretical grounds for an understanding of Vernacular architecture.

According to Oliver in his book *Dwellings: The House across the World*<sup>4</sup>, there may be between 800 million and 900 million dwellings on this earth, of which only about one percent are built by architects, perhaps even less. This establishes the overwhelming domain of vernacular architecture, and thus the importance of this branch in the *Taxonomy*. But the Vernacularism which Ozkan describes as being built by the people who subscribe to age-old traditions, has undergone, due to today's global realities, certain variations. These variations exist in addition to the main vernacular stream of architecture as described by Rudofsky and Oliver. Functions which did not exist in ancient vernacular cultures, and for which Vernacularism has made no accommodations, have been introduced. Thus, a certain interpretation of the prevalent vernacular to accommodate these new functions, has been made. An example of this, according to Ozkan, would be new functions like tourism. As has been mentioned before, Ozkan calls this type of architecture, "Interpretive" Vernacular or "Neo-Vernacularism".

It may be argued that a building for a function like tourism is not built by the local people, but by an architect. This may be true, but the architect is forced to use vernacular principles as the main concept behind his design. The technology may

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<sup>4</sup> Oliver, Paul. *Dwellings: The House across the World*. Austin: University of Texas Press, 1990.

not necessarily be the same, but the identity attempted is vernacular. Thus, this type of architecture could not have been placed anywhere else in the *Taxonomy*, except within the main branch of Vernacularism. Within this main branch, is a third category which is called “Conservation” which obviously attempts to conserve the domain of Vernacular architecture. Thus, we see that the main branch of Vernacular architecture (or “Historically Derivative” Regionalism) in the *Taxonomy* is dedicated to the age-old architecture built by the people.

It becomes obvious that this is distinctly different from the architecture designed by today’s architects. The practice of vernacular architecture, according to Paul Oliver, is almost completely dead in the Western nations.<sup>5</sup> It is, therefore, limited to the rest of the world. The Western method of architectural practice has filtered into the East due to the its colonial past as has already been discussed earlier in this chapter. This has also been acknowledged by Suha Ozkan in his description of the *Taxonomy of Regionalism*.<sup>6</sup> The advent of Modern architecture, also, is an import from the West. Thus, the East has two methods of architectural practice—the Western method, i.e. architect-designed buildings, which is almost entirely based upon the Modern Movement in architecture and uses modern technology; and the local Vernacular method, which is usually built by the people using traditional technology and materials. The *Taxonomy of Regionalism* bases its classification upon these two approaches.

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<sup>5</sup> Oliver, Paul. *Dwellings: The House across the World*. Austin: University of Texas Press, 1990.

<sup>6</sup> Ozkan, Suha. “Introduction: Regionalism Within Modernism” in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985. See also Powell, Robert and Ozkan, Suha. “A Taxonomy of Regionalism” in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*, Singapore: Landmark Books, 1989.

The differences between the two methods are not limited to what has been mentioned above. The two methods of architectural practice differ even further. For the purpose of discussion, what I have called the “Western method” of architectural practice, will be referred to as “modern architectural practice”. Some of the following differences are inferred from Paul Oliver’s book *Dwelling: The House across the World*<sup>7</sup>, Amos Rapoport’s *House Form and Culture*<sup>8</sup> and Bernard Rudofsky’s *Architecture Without Architects*<sup>9</sup>.

In addition to the two distinctions made above between modern architectural practice and vernacular practice, vernacular practice is said to be determined by socio-cultural realities of a society. Rapoport laments the fact that modern architectural practice no longer is determined by socio-cultural realities as in the case of vernacular building. To use Frampton’s words, modern architecture seems to be driven primarily by commercialism and standardized technology.<sup>10</sup> Some contemporary architects attempt to emphasize art as defined in today’s terms—“art for art’s sake”<sup>11</sup>. But the socio-cultural realities no longer seem to determine architectural form in modern architectural practice.

Vernacular architecture employs meaningful traditional ornamentation, and in many vernacular societies, the building and settlement layout is based on certain myths, cosmological orientations, religious prescriptions, and so on. This ornamentation

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<sup>7</sup> Oliver, Paul. *Dwellings: The House across the World*. Austin: University of Texas Press, 1990.

<sup>8</sup> Rapoport, Amos. *House Form and Culture*. Englewood Cliffs, N. J.: Prentice-Hall Inc. 1969.

<sup>9</sup> Rudofsky, Bernard. *Architecture Without Architects: An Introduction to Non-Pedigreed Architecture*. New York: The Museum of Modern Art, 1964.

and layout, along with materials, technology, climatological considerations, and so on are what we call “traditional wisdom” which is passed on from one generation to another and is followed strictly. Architectural form, based on the above factors, is usually the same for every family.<sup>12</sup> This form of design is what Ozkan calls, using Braodbent’s term, “typological”. The settlement and the land on which it is built, gives the community a sense of identity. This does not seem to be characteristic of modern architectural practice.<sup>13</sup> Modern architectural practice seems to lay its emphasis on the individual building. Each building is unique in itself and premium seems to be placed upon the architect’s talent to produce the “best” building. In trying to achieve this end, a client may hire an architect who is from outside his community if such “talent” is not available within his community.

Essentially, therefore, in modern architectural practice, an “outsider” is designing a building. Also, s/he is designing for another about whom s/he may not know too much. This is as against what usually happens in vernacular architecture. In a vernacular society, the buildings are designed, if not by the occupants themselves, by a person within the community who is closely associated with the ways of that community. But on many occasions, the occupants themselves will build the house with help from members of the community. This depends upon the nature of the community.<sup>14</sup>

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<sup>10</sup> Frampton, Kenneth. *Modern Architecture and the Critical Present*. London: Architectural Design, 1982.

<sup>11</sup> Ibid.

<sup>12</sup> Rapoport, Amos. *House Form and Culture*. Englewood Cliffs, N. J.: Prentice-Hall Inc. 1969.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.

Modern architectural practice, according to Frampton, is of a universal nature and has lost the attachment to the place and community within which it is built, resulting in a loss of local architectural identity. The regional approach to architecture which attempts to retrieve this identity within the reality of the modern architectural practice, is what Ozkan and Powell call “Historically Transformative Regionalism” or “Modern Regionalism”. Thus, it seems evident that the differences between vernacular architecture and modern architectural practice, cited above, form the basis of the two main streams of regionalism presented in the *Taxonomy of Regionalism*. It appears therefore, that *Critical Regionalism* should be placed under the category of “Modern Regionalism”.

“Modern Regionalism” is further divided into two branches—“Replicative Regionalism” and “Abstract Regionalism”. “Replicative Regionalism” tries to achieve a regionalism by copying fragments or entire buildings from the past, without modification, to suit the present realities, using modern materials and methods of construction. “When these buildings are loaded with spiritual values of symbolic relevance, they become much more acceptable in their new form, owing to the values attached to the original. It brings a comfortable defence in support of the new backed by the qualities of the old.”<sup>15</sup> The last sentence conveys the idea that “Replicative Regionalism” has a very strong connection with the age-old traditions of a region. It builds upon the tradition of a region and uses building forms and fragments from the past to convey a sense of spiritual and symbolic relevance.

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<sup>15</sup> Powell, Robert and Ozkan, Suha. “A Taxonomy of Regionalism” in Powell, Robert. *Ken Yeang: Rethinking the Environmental Filter*. Singapore: Landmark Books, 1989, p.15.

The ideological basis of *Critical Regionalism* does not allow for the incorporation of traditions and history. Also, *Critical Regionalism* does not address “spirituality” and its only connection with the past is when it proposes the use of elements from the past “out of context” in an attempt at preventing a nostalgic return to the forms and images of the past. The concept of symbolism as applied to “Replicative Regionalism” conveys a certain nostalgia as, according to Powell and Ozkan, it merely replicates, rather than adapting itself to the present realities. “Replicative Regionalism” also acknowledges “Pastiche” and “Eclectic” approaches to a regional architecture. *Critical Regionalism* does not subscribe to these ideas as it proposes the use of “locally cultivated meaningful images” and the meaningful incorporation of alien elements to convey the sense that the building belongs to the “world culture”. Thus, it seems that *Critical Regionalism* cannot be placed under “Replicative Regionalism”.

As has been explained earlier, “Abstract Regionalism” abstracts elements or cultural patterns from the past in order to derive new building forms. Whereas “Replicative” merely replicates without modification, while “Abstract Regionalism” *derives* present form on the basis of what it was in the past. According to Ozkan and Powell, therefore, “Abstract Regionalism” is the richest sub-theme and is most relevant to the countries of the East. This approach enables an architecture of a region to evolve from the past while incorporating present influences. In this sense, it is transformative, wherein a building is modern and yet retains the essence of a culture. It incorporates a society’s cultural patterns and responds to the variations of the local climate. It may also use iconographic elements to convey its rootedness in a particular place.

Axioms 7 (see last sentence of this axiom as written in this chapter), 8 and 9 of Frampton's theory of *Critical Regionalism*, as written in this chapter, convey the notion that *Critical Regionalism* responds to the climate and light of a region. It attempts to avoid the use of artificial methods for ventilation, light and achievement of a comfortable temperature. It proposes that through the use of building design itself, these objectives should be met. The subcategory of "Climatically Responsive" architecture of "Abstract Regionalism" corresponds to this quality of *Critical Regionalism*.

"Abstract Regionalism" calls for the incorporation of cultural patterns within contemporary architecture. Axiom 3 of *Critical Regionalism* proposes that a region can become culturally resistant to the onslaught of universalizing forces by defining the limits of a region in terms of its "myths". The word "myths" in this case means any "self-consciously created culture" within a region.<sup>16</sup> To achieve this, Frampton calls for identifying or creating the local "schools" of culture which may include the ideological strategy of a local "school" of architecture. Frampton attempts to use these "myths" as a force to counter the onslaught of universalizing forces. It is evident that both "Abstract Regionalism" and the theory of *Critical Regionalism* propose the reflection of local culture in their architecture.

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<sup>16</sup> This definition of "myth" appears in all of the publications of the theory of critical regionalism used in this thesis. But in a conversation this author had with him at Kansas State University on February 12, 1998, Frampton clarified that the term "myth" can also include cultural "myths" derived from the ancient past. This clarification, it seems, has been made specifically with the traditional cultures of the East in mind. A possible interpretation of these two types of myths can be summed up in the terms "ideological" myths and "authentic" myths. The phrase "self-consciously created culture" seems to belong to the ideological definition of myth which, according to Frampton's published definition of "myth", seems to be applicable to the Western reality in which Frampton argues for a discontinuation of the past by building upon the principles of architectural modernism.

“Abstract Regionalism” allows the use of iconographic elements to fulfil its objectives. *Critical Regionalism* proposes to import alien elements as “disjunctive episodes” to convey that it belongs to the “world culture”. The “disjunctive” use of these alien elements displays the duality of *Critical Regionalism*—it is rooted in a region, while being connected to the “world culture”. It is an intentional disjunction which is meant to be symbolic of the connection to the world. The Oxford English Dictionary defines “iconography” as the “illustration of a subject by drawing or figures”.<sup>17</sup> *Critical Regionalism* attempts to use alien elements to “illustrate” the “subject” of the connection of local culture to that of the world. The example of Jorn Utzon’s church at Bagsvaerd, Denmark is, according to Frampton, an ideal example of local connection to “world culture”. It is clearly “Iconographic” due to its figural configuration.

Thus, we see that the theory of *Critical Regionalism* fulfils all three qualities required to qualify as a form of “Abstract Regionalism”. But, despite this, we know that *Critical Regionalism* has some additional components which do not find a place in the branch of “Abstract Regionalism”, thus making it distinctive by itself. For example, Axiom 6 calls for a contextual design sympathetic to the urban fabric within which it is built. This requirement is not reflected anywhere in the *Taxonomy*. Similarly, Axiom 7 calls for architectonic design as against scenographic design. A scenographic design is defined by Frampton as one which attempts to be representational of a tectonic rather than display truly the tectonic employed in a building. This requirement is in response to the trends in the West. Frampton says that due to media attention, architecture

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<sup>17</sup> Thompson, Della(ed.). *The Pocket Oxford Dictionary*, Eighth Edition (Indian Edition), Delhi: The Oxford University Press, 1992, p.435.



attempts to become scenographic, i.e. made for the camera. This requirement is a response to the Western realities, as such a situation in which a design is made for the camera, does not seem too dominant in the East.

Another such axiom formed in response to the realities of the West is Axiom 5 which calls for a “topological” rather than “typological” design. According to Frampton, this “typology” is a consequence of the standardized building materials manufactured in the West, and the common practice of leveling a piece of land on which a building is to be built. The standardized components do not make accommodation for contours on a site and require that the land be flat. In response to this situation, Frampton proposes that a building should respond to the topography of the site and to achieve this, the use of standardized building materials should be limited. Such a situation does not prevail in the East and hence is not a requirement in the *Taxonomy*.

In addition to these qualities, *Critical Regionalism* calls for truthful “Multi-Sensorial Perception”. Axioms 4 and 10 convey this idea. This is again partly in response to trends in which the building is made for the camera. In trying to capture media attention, architects have shifted their focus from the “experience” of a building to creating a photogenic appearance. Frampton calls for a return to the “experiential” character of a building. To achieve this, Frampton, in Axiom 10, calls for a “tactile” approach that is true to a building’s visual appearance. The “tactile” refers to the sensations of aspects such as the aroma of the materials used, the sound of our own footfall onto a material, the sensations of heat and cold as they relate to a material, and so

on. In addition, these experiences should be conveyed visually as well. That means, if the visual characteristics of a building show a cool interior, the interior must be experienced as being cool. The key to achieving this kind of holistic perception may lie in the truthful use of materials. Materials must not be representational. Laminates manufactured today, may visually display materials other than of which they are made. Such representational materials create a rift between the visual and tactile experiences of a building. Therefore, such materials must not be used.<sup>18</sup>

These characteristics, which go beyond those of Ozkan and Powell's "Abstract Regionalism" make *Critical Regionalism* unique. But despite the fact that these distinctive qualities are in response to the Western situation, they may be used in the East also to arrive at a more meaningful regional architecture. Thus, so far it seems that *Critical Regionalism* may be applicable to the East. It may seem, at the moment, that due to these unique qualities, a separate position may be required for *Critical Regionalism* within the *Taxonomy*. This position may have to be parallel to "Abstract Regionalism" since, in addition to meeting the requirements of "Abstract Regionalism", *Critical Regionalism* possesses certain distinctive qualities which may not be identified as abstract. But the ideological basis of the theory of *Critical regionalism* does not make this possible.

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<sup>18</sup> Frampton, Kenneth. "Ten Points on an Architecture of Regionalism: A Provisional Polemic" in Speck, Lawrence(ed.). Report of the seminar titled "New Regionalism" held at University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*-Vol.3. New York: Rizzoli, 1987, p. 27.

The basis of a regional architecture in the East is to build upon the history, traditions and culture of a region, which are ancient in nature. As has already been discussed, the Western reality, on the other hand, aims at disconnecting links with the past. The very basis of architectural Modernism, which evolved in the West, demands a disconnection with the past. Romi Khosla, in an interview with this researcher, is of the opinion that the two world wars and the loss of approximately 50 million western lives, was the point at which the West cut off its links with the past. The large number of lives lost resulted in the destruction of the tradition of arts and craft. Europe, according to Khosla, became like America, attempting to start afresh essentially without a (building) tradition to fall back upon.<sup>19</sup> The focus, therefore, fell on invention and innovation, a trend that continues up to today.<sup>20</sup>

Kenneth Frampton's *Critical Regionalism* seems to be a manifestation of this Western reality as it proposes the "creation" of an identity based upon a local school of cultural thought. If it touches upon the past, it is not to the extent that "Neo-Historicism" to which he refers is connected with the past. Nor is *Critical Regionalism* "Neo-avant-gardist", looking only to the future. Frampton says that *Critical Regionalism* lies between these two extreme positions, with an inclination towards the latter. *Critical Regionalism*, according to Frampton, builds upon the premise of architectural Modernism, which, as we have seen, demands a disconnection with the past. But

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<sup>19</sup> Said in an unpublished interview given to this author in New Delhi, India, on June 25, 1997.

<sup>20</sup> Speck, Lawrence(ed.). Report of the seminar titled "New Regionalism" held at University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*- Vol.3. New York: Rizzoli, 1987.

Modernism, Frampton says, has a rich heritage and itself cannot be abandoned.<sup>21</sup> Thus, it seems that the component of history in *Critical Regionalism*, dates back to the period of Modernism. It is, therefore, not the distant past, as is the case in the East, but a relatively recent past.

Thus we see that *Critical Regionalism* differs from the two main classifications of regional architecture in the *Taxonomy* due to the fact that it attempts to “create” an identity out of the relatively young heritage of the West. The theory evidently does not rely upon the past for its survival. As against this, the regional architecture proposed for the East needs the past for its survival and has the option of disregarding Modern architecture, almost completely, through the use of vernacular architecture. The “Historically Transformative” strand of the *Taxonomy* uses modern technology, but may or may not necessarily subscribe to the principles of architectural Modernism. The importance of the past is announced in the very names of the two main strands in the *Taxonomy*—“Historically Derivative” and “Historically Transformative”.

The second area in which *Critical Regionalism* differs from the two main strands of regionalism in the *Taxonomy* is due to the idea of universalization, as explicated by Paul Ricoeur. *Critical Regionalism* is said to be in response to the forces of universalization which confront the world due to today's technology. Thus it combats a uniform world civilization by attempting to create a domain which furthers an identified

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<sup>21</sup> Frampton, Kenneth. “Ten Points on an Architecture of Regionalism: A Provisional Polemic” in in Speck, Lawrence(ed.). Report of the seminar titled “New Regionalism” held at University of Texas at Austin, USA, between April 24 & 25, 1986, and published in *Center: A Journal for Architecture in America*-Vol.3. New York: Rizzoli, 1987.

or created school of cultural thought and uses technology which is not standardized in an attempt at creating a place and subsequently, a distinctive local or regional identity.

As against this ideology of *Critical Regionalism*, the East, through its two main strands of regional practice, attempts to “continue” established age-old cultures and traditions, while resisting the onslaught of “Westernization” (which may ultimately lead to Universalization), in an effort to “retain” (rather than “create”) its identity.

The two ideological differences between *Critical Regionalism* and the approaches proposed in the *Taxonomy*, seem to indicate that *Critical Regionalism* cannot be classified under either of the two existing strands of the *Taxonomy*. The position of *Critical Regionalism* in the *Taxonomy* may be such that it forms a completely new third strand of regional architecture, a strand which addresses the Western approaches to regionalism. Such a placement reveals the connection between the East and the West in Modern architectural practice.

But the term “Modern Regionalism” (as read separately from the term “Historically Transformative” regionalism) implies a regional approach to architecture within “modern” architectural practice. As we have seen earlier, the modern regional practice of architecture in the East has the option of using modern technology, while not subscribing to the principles of Modernism. This option, for the purposes of our discussion, means that the East does not necessarily dissociate itself with the pre-modern past. But the term “Modern Regionalism”, since it conveys the practice of regionalism

within “modern” architectural practice, may also include the principles of Modern architecture, i.e. a disconnection with the pre-modern past. *Critical Regionalism* is an approach within the Modern realm and proposes to build upon the premise of Modern architecture. As we have seen, it does not connect with the pre-modern past due to its position between “Neo-Historicism” and Neo-avant-gardism”.

The meaning of the term “Historically Transformative”, as used by the Ozkan and Powell, implies a connection with history as understood in the East, i.e. an emergence from the ancient past, in an attempt to *retain* its identity in the homogeneous, universalizing world of today. A regionalism which uses Modernism as its basis cannot “retain” an identity, but, as *Critical Regionalism* attempts, tries to *create* an identity within a universalizing environment after being surrounded by the universalizing environment’s homogeneity.

Both approaches are valid under the term “Modern Regionalism”. But they may not be valid under the term “Historically Transformative” regionalism. This suggests that the terms “Modern Regionalism” and “Historically Transformative” regionalism do not convey the same meaning.

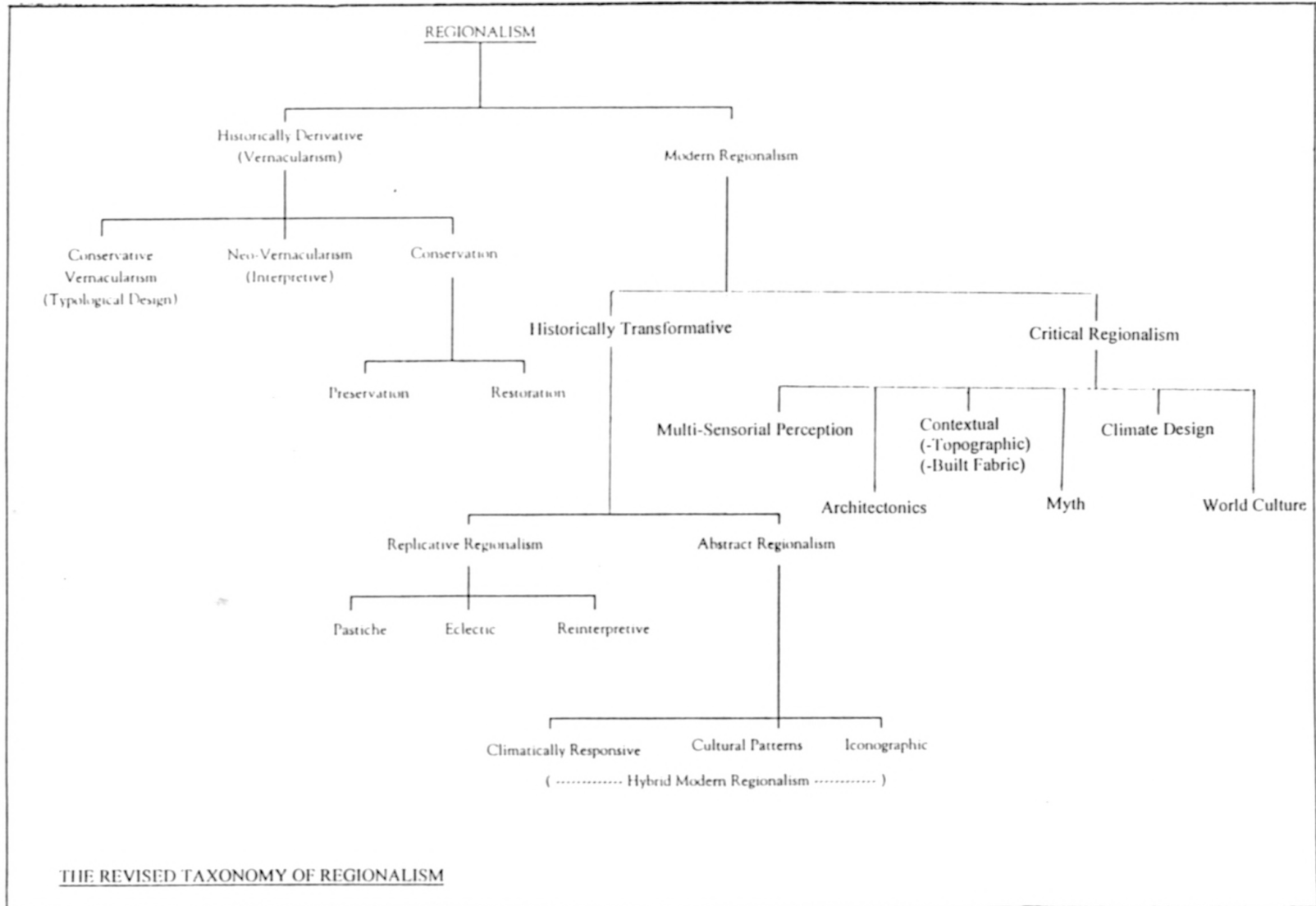
We have seen that a modified form of the theory of *Critical Regionalism* can be practiced in the East as demonstrated by Sanjeev Sharma. Hence, if *Critical Regionalism* is a valid form of regional practice in the East, and if it has to be placed within the *Taxonomy*, it may be necessary to modify the *Taxonomy* such that the terms

“Modern Regionalism” and “Historically Transformative” are separated, due to the different meanings they convey.

Thus, we see that *Critical Regionalism* needs a place parallel to “Abstract Regionalism”, under “Modern Regionalism” but separate from “Historically Transformative” regionalism. The fact that *Critical Regionalism* possesses some distinctive qualities in the form of “experiential” aspects, “contextual” design, “topological”(as against typological) design and “architectonic”(as against scenographic) design, necessitates the creation of sub-branches under *Critical Regionalism* which display these qualities.

Thus, “Historically Transformative” regionalism will continue to indicate the “Replicative” and “Abstract” regional practices, but “Modern Regionalism” will now represent a “modern” regional practice in a broader sense and will also include regional practices of areas other than the East. As more approaches to regionalism are established across the world, they may be added to the strand of “Modern Regionalism”, making the *Taxonomy* a comprehensive classification of regionalism as practiced across the world, rather than limiting itself to the Eastern practices.

The implications of the above discussions on Ozkan and Powell’s *Taxonomy of Regionalism* are reflected in the form of a *Revised Taxonomy of Regionalism* which is displayed on the following page.



THE REVISED TAXONOMY OF REGIONALISM



## CHAPTER VI

### THE CONTEXT OF INDIA

The discussion so far has been an exploration of the concept of regionalism on a general basis with the East and the West being the subjects of discussion. The concern of my thesis is the situation in India. It seems appropriate at this juncture, to review the reasons for the evolution of regionalism and the general realities of the East, but now with relation to India.

As discussed earlier, the colonial legacy in India attempted to obliterate the traditions and styles of the past in the architecture of India. According to Tillotson,<sup>1</sup> due to this, the tradition of Indian craftsmen was on the decline, resulting in a situation which threatened the continuation of the past.

After 1947, the few architects present were trained in the Western methods (in particular, Modern architecture). Thus, the advent of architectural Modernism seemed inevitable due to the changing world structure then, and the Western trained local architects. This resulted in a certain loss of identity for Indian architecture of the time. Architectural Modernism was also given patronage by the late prime minister of India, Jawaharlal Nehru when he invited Le Corbusier to design the city of Chandigarh.

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<sup>1</sup> Tillotson, G. H. R. *The Tradition of Indian Architecture: Continuity, Controversy and Change Since 1850*. New Haven & London: Yale University Press, 1989.

But the loss of identity and the effects of alienation among the masses were exacerbated—first with the imported colonial architecture and then with the import of architectural Modernism. According to Balkrishna Doshi, this alienation and loss of identity was responsible for a lot of anxiety among the masses.<sup>2</sup> But there were other reasons, in India as in the rest of the East, which necessitated a search for a contemporary architectural expression. These reasons are summarized below.

### **MOTIVATIONS FOR A REGIONAL ARCHITECTURE**

The following motivations for a regional architecture in India have been derived from the motivations for regionalism identified for the East in the previous chapters.

- 1) As mentioned above, one motivation for the search for a regional approach to design in India is the loss of architectural identity due to the effects of Modern architecture. Having tasted Westernization, Indians have begun to take a serious look at their own history and are finding valid cultural aspects which they had once overlooked, in an effort to address the issue of architectural identity.
- 2) Secondly, according to Powell and Ozkan, technological inferiority is equated with cultural inferiority by the West. This, they say, enables the West to wield influence over

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<sup>2</sup> Doshi, Balkrishna V. "Social Institutions and a Sense of Place" in Ameen, Farooq (ed.). *MARG: A Magazine of the Arts*, Vol. 48, No. 3, Mumbai: Marg Publications, March, 1997.

everything in the East. Thus, India, like other nations in the East, seems to be attempting to break this hegemony, while asserting its right to indigenous cultural development.

3) The third reason for the search for an architectural identity in India seems to be the “vacuum” created after the validity of architectural Modernism in the West was thought to be in doubt. Subsequently, the West attempted several diverse directions in the search for a long term direction in architecture. India and other nations in the East, therefore, did not have a laid out path to follow as was the case up to the collapse of the hegemony of architectural Modernism.

Thus, India, like other Eastern nations, is attempting to regain its architectural identity while adopting the tools of modern technology in the face of overwhelming influence from the West.

Having discussed the motivations which make the search for a regional identity in India a necessity, we will now review the general realities within which such a search will have to be made.

### **REALITIES OF THE INDIAN CONDITION**

The following points have been derived from the realities of the Eastern condition as described in the previous chapters.

- 1) Like most other Eastern nations, architecture in India is divided into two main types—that built by the people, and the other which is built by the “trained architect” educated in Western values and methods. The architecture built by the people is generally referred to as vernacular. Its characteristics include a traditional approach to design using either traditional materials like wood, stone, mud, and so on, or with handmade brick, mortar, corrugated metal sheets and so on. The architecture designed by the architect is almost always built in steel, concrete, glass, industrially manufactured brick and so on.
- 2) The second characteristic, which is visible in both vernacular and architect-designed buildings, is that the architectural imports of the British era have never been assimilated in the architecture of post-independence India. If a connection with the past in architecture is made today by architects or the people, it is with the pre-colonial past.
- 3) But the import of architectural Modernism, which occurred after the colonial period, is willingly accepted. Thus, it seems that both lay people and architects prefer to disregard the colonial era as foreign and unfriendly, and therefore, incompatible with mainstream Indian culture.
- 4) The final reality of the Indian condition is that architect-designed architecture in India is generally found in the urban areas, while the vernacular is usually found in the rural areas.

## THE SCOPE OF THIS RESEARCH

### ‘Architect-designed Architecture’

It is important to bear these four realities in mind since they determine the nature of the following course of this research. This research concerns itself mainly with architect-designed buildings and not those built by the people. Within this body of architectural work, it is observed, at a cursory glance, that architects connect with the “Modernist” past in architecture, and attempt to build upon it. Usually, such architects do not indulge in traditional vernacular design.<sup>3</sup> This is because their training, as has been discussed earlier, does not emphasize the vernacular and is based, by and large on Western methods.

Based upon the four realities discussed above, this research is specifically, therefore, a discussion about architecture which is,

- (a) architect designed,
- (b) developed with architectural Modernism as its base, but connected with the pre-colonial past,
- (c) predominantly urban in nature.

This research, therefore, does not discuss the architecture built by the people which is generally rural and *rooted* (as against the word “connects” used above) in

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<sup>3</sup> With the exception of Laurie Baker, an architect who practices in southern India.

the pre-colonial past with almost no connections with architectural modernism, its principles or its tools.

### **Selection of the Architects and their Works**

The aim of this research is to examine the works of two architects within the framework of the *Revised Taxonomy of Regionalism* described earlier in this thesis. The task, therefore, was to identify architects who have been known to practice architecture within urban Indian realities, by building upon the legacy of architectural modernism. In addition, these architects must be known to be sympathetic with the motivations for a regional architecture in India as defined above. It is this latter condition that differentiates the numerous general architectural practitioners from the few who are striving to achieve an identity for contemporary urban Indian architecture by adopting a regional approach to design.

Prominent among the architects considered were Laurie Baker, Charles Correa, Balkrishna Doshi, Raj Rewal, Anant Raje, Achyut Kanvinde, Uttam Jain, and several others. But within this spectrum of architects, few have been widely published nationally as well as internationally. Due to the fact that this research is conducted outside the country of India, limiting, therefore, opportunities of personal contact between researcher and architect, only those architects whose works have been widely published internationally were considered. These architects include Charles Correa, Balkrishna Doshi and Raj Rewal. The works and ideologies of these three architects have

been extensively published in the form of books and journal articles making available to this researcher detailed information to facilitate this research.

Time limitations required that the work of only two architects be studied. The task was, therefore, to select two of the three architects identified. Since the intention of this research is to study Western influences in architecture and how they connect to Indian realities, it was thought that architects whose practice is located in areas characterized by heavy influences from the West would be most appropriate. The practices of Charles Correa and Raj Rewal are centered in the cities of Mumbai (formerly Bombay) and New Delhi respectively, while that of Balkrishna Doshi is located in the city of Ahmedabad in the western Indian state of Gujarat. The cities of Mumbai and New Delhi are cities of national significance and have been identified by the Indian government as two of the four metropolitan cities in the country (the other two being the cities of Calcutta and Madras). The metropolitan cities have extensive contact with the outside world and the West in particular. They are at the “interface” between the outside world and India, and international influences first reach these four metropolitan centers before filtering into the rest of the country.

On the other hand, the city of Ahmedabad is identified as having regional significance limited to the state of Gujarat within which it is located. It has limited contact with the outside world. The architects practicing in the metropolitan areas are, therefore, likely to be most influenced by international events as compared to architects

in other areas. Thus, the practices of Correa and Rewal became natural choices for this research.

This selection was reinforced further when this researcher tried to establish personal contact on a visit to India in June 1997. Personal contact could be established with Correa and Rewal only, since Doshi was not available at the time. This was another reason why Doshi's work was not selected for the study.

During the personal conversations this researcher had with Correa and Rewal in their respective offices, the nature and purpose of this research were explained to them and their reactions were obtained. The architects were then asked to identify one of their recent projects which merited a study of the nature of this research. While Correa declined to comment and left the job of selection of such a project to this researcher, Rewal suggested two possible choices. These choices were the National Institute of Immunology and the Central Institute of Educational Technology, both located in New Delhi. On visiting each site, it was found that the two buildings mainly differed in their sizes. The National Institute of Immunology was a large spread out building, while the Central Institute of Educational Technology was more compact and smaller in size. Time limitations necessitated the selection of the Central Institute of Educational Technology because its smaller size enabled a more detailed analysis of the project within the given time.



The Central Institute of Educational Technology (CIET) is a government funded project providing for the development of educational tools to be used by the electronic mass media. It is located in the campus of the National Centre for Educational Research and Technology in New Delhi—an institution dedicated to research in the development of school and pre-college education. The tools developed in the CIET facilitate education of children across the country through electronic media like computers, television, videos, and so on. It was completed in 1990 and has been in use since then.

Having chosen one of Rewal's buildings for study, it was then necessary to identify a relatively recent project of similar function and size by Correa. The only project which seemed to compare with the CIET on the bases mentioned above is called the Inter-University Centre for Astronomy and Astrophysics (IUCAA) in the city of Pune very close to the city of Mumbai. The IUCAA is an educational institution for doctoral and post-doctoral research in astronomy and astrophysics located in the campus of the University of Poona, Pune. The building was funded by the University Grants Commission, a central government body, and completed in 1992.

It may be argued that the selection of a building in the city of Pune (and not Mumbai) does not contradict the argument of selecting an architect from a metropolitan area. The intention of this researcher was to select architects whose practice is located in the metropolitan areas, because they are likely to be the ones most influenced by international architectural ideas and trends. Therefore, the location of a

building may not be as important as the fact that an architect is practicing from a metropolitan area. Consequently, the fact that the IUCAA is located in Pune and not in Mumbai may not matter as much as the fact that Correa's practice is located in the city of Mumbai.

Having identified the architects and the projects selected for this research, we will now discuss how the framework is applicable for this research, and the research intent.

### **The Framework and the Research Intent**

The *Revised Taxonomy of Regionalism* presents itself as a classification of the many possible approaches available for the practice of a regional architecture in the East as well as the West. While the scope of the original (unmodified) *Taxonomy* seemed to limit itself to the architecture in the East, the revised version opens itself to the approaches being practiced in parts of the world other than the East.

It must be mentioned here that the *Revised Taxonomy* may not represent *all* existing approaches to regionalism. But the new version makes the *Taxonomy* representative of the global practices of regionalism, rather than limiting itself to the East only.

The original *Taxonomy* was based upon the four following components:

***The Mode of Production***

- Indigenous craftsman
- Master mason
- Architecture/contractor

***The Client/User***

- Indigenous population
- Tourist
- Institution, etc.

***The Construction Technology***

- Low energy – self help
- High technology

***The Materials***

- Attap, bamboo, mud
- Brick, concrete
- Steel, glass, etc.

This study falls under the main theme of “Modern Regionalism” of the *Revised Taxonomy of Regionalism*. This can also be argued by proving that this research does not fall under the theme of “Vernacularism” in the Taxonomy. The three sub-themes of “Vernacularism” are “Conservative Vernacularism”, “Neo-vernacularism” and “Conservation”. “Conservative Vernacular” has been defined by the authors of the original *Taxonomy* as a fixed typological design built by the conventions of traditional craftsmanship. Besides, this type of design is created by lay people and almost never by architects.

“Neo-vernacular” brings new life to a vernacular heritage for functions which did not exist before today. The example given by Powell and Ozkan is tourism related buildings, where the form of another (interpreted as “vernacular”) type of building may be reinterpreted for a new function. The buildings under study, as we will see later, do not fall under this category. Also, the buildings under study have nothing to do with conservation, either of buildings or of culture. As we will see later, both architects prefer not to “conserve” culture, but *transform* it to suit today’s realities.

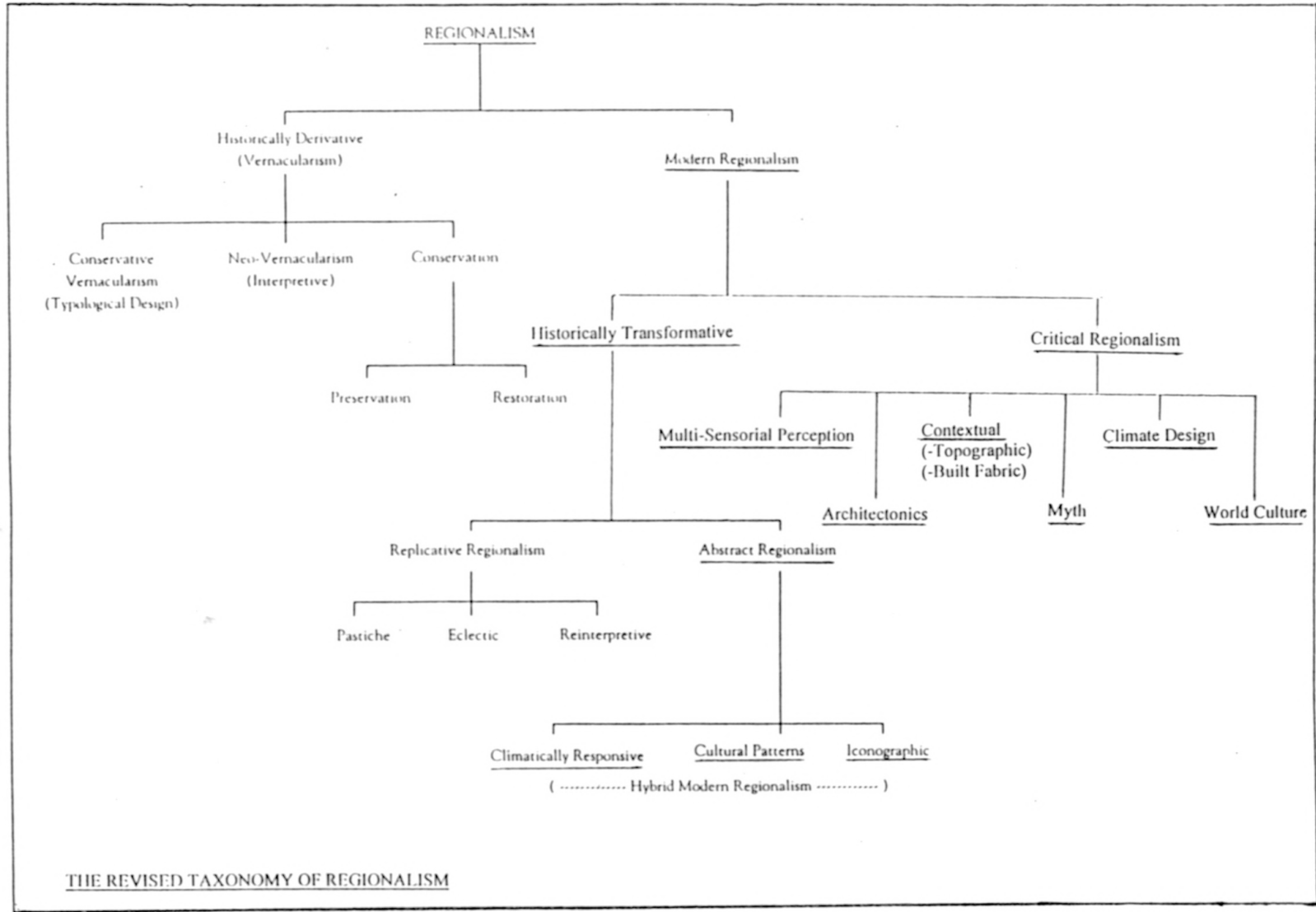
All these factors establish that the buildings do not fall under the main theme of “vernacularism”. Thus this research has to do with the “Modern Regionalism” theme of the *Revised Taxonomy*. But within the theme of “Modern Regionalism”, the “Historically Transformative” category is further divided into “Replicative Regionalism” and “Abstract Regionalism”. The “Replicative Regionalism” branch, as defined by Ozkan and Powell, intends to revive the past by directly replicating elements from the past within the present reality, without modification or transformation. As we will see, neither Correa nor Rewal adopt this approach.

The aim of this research is to identify works which incorporate the present realities of Western imports within the evolving mainstream culture which, according to Ozkan and Powell, is a characteristic of “Abstract Regionalism”. Ozkan and Powell are of the opinion that “Abstract Regionalism” is more important and relevant within the realities of the East today than the other branches within the *Taxonomy*. This thesis, therefore, will not consider the “Replicative Regionalism” branch. Having eliminated all

other possibilities, the examination of the two works will be done within the domain of “Abstract Regionalism” and *Critical Regionalism* only, as shown in the *Revised Taxonomy* on the following page.

The intention of this research then, is to study the two works, i.e. Charles Correa’s Inter-University Centre for Astronomy and Astrophysics at Pune, India, and Raj Rewal’s Central Institute of Educational Technology at New Delhi, India, within the domain of “Abstract Regionalism” and *Critical Regionalism* as defined in the *Revised Taxonomy of Regionalism*, with an aim to identify the ways in which the two buildings respond to the contexts of their respective regions. An attempt is made to identify whether the two buildings display characteristics that might help in the evolution of a national identity for contemporary architecture in India.

Thus, so far we have established the focus of this research, first within the two realms of architectural practice in India, and then with relation to the components of the *Revised Taxonomy*. The examination of the two buildings is based upon the realities of the Eastern condition in general and the Indian condition in particular, as has been described in this chapter. The examination attempts to identify which of the components within the “Abstract Regionalist” and “Critical Regionalist” practices are fulfilled by the two buildings in order to establish the kind and extent of regionalism they exhibit. In the following chapters, the two architects and the buildings selected are studied. The ideology of Correa is described first, followed by a description of the IUCAA. After these descriptions, the theoretical constructs of “Abstract Regionalism” and *Critical*



*Regionalism* are applied to the IUCAA. On completion of the analysis of the IUCAA, Rewal's ideology and his CIET are discussed in a similar format, followed by an analysis of the CIET within the established domain of "Abstract Regionalism" and *Critical Regionalism* of the *Revised Taxonomy*. In the concluding chapter, the differences between the two architects and their works are discussed briefly. Finally, an attempt is made to identify the commonalities between the two approaches in an effort to contemplate the possibility of the emergence of a school of thought for contemporary architecture in India.

Before proceeding further, it is first necessary to discuss briefly the format of analysis of the two buildings selected. Certain categories in the theoretical domains of "Abstract Regionalism" and *Critical Regionalism* can be seen to display similarities. For instance, the characteristic of "Climate Responsiveness" in "Abstract Regionalism" is similar to the category of "Climate Design" under the heading "Critical Regionalism". Also, the theme of "Cultural Patterns" under "Abstract Regionalism" is similar to the notion of "Myth" under *Critical Regionalism*, since "myths" are always a part of a society's culture. Finally, the concept of "Iconography" is related to the that of "World Culture", as seen in the example of the iconographic connection Utzon's Bagsvaerd Church has to world culture. Thus, when discussing the characteristics of "Abstract Regionalism" with respect to the two buildings selected for study, connections with *Critical Regionalism* will also be discussed.

## CHAPTER VII

### CHARLES CORREA

#### A BRIEF LIFE SKETCH

Charles Correa is a contemporary Indian architect of international repute who has to his credit a large number of buildings in India and other parts of the world. He is known to be an architect who strives to create an Indian identity in the face of external influences. Born in Secunderabad, India, on September 1, 1930, Correa studied in Bombay before departing for the United States to study architecture at the University of Michigan. Following his undergraduate studies, he pursued a Master of Architecture degree at the Massachusetts Institute of Technology until 1955. Correa then worked in the USA for a while before returning to India. He has been in private practice since 1958.

Correa is a Fellow of the Indian Institute of Architects and an Honorary Fellow of the Royal Institute of British Architects and the American Institute of Architects. His first valuable contribution to the architectural profession in India was when he and two colleagues prepared a proposal for the twin city of New Bombay in 1965.

Following this proposal, he was appointed Chief Architect to the City and the Industrial Development Corporation (CIDCO) of the government of Maharashtra. Subsequently, he served on the Board of Directors of CIDCO (New Bombay) from 1975



to 1989. Simultaneously, at various times he was also the Chairman of the Housing Urban Renewal and Ecology Board, Bombay, the Bombay Metropolitan Region Development Authority, and the National Commission on Urbanization, Government of India.

Between 1975 and 1976, Correa was consultant to the United Nations Secretary-General for HABITAT. Prior to that, he was invited by the government of Peru and the United Nations to design the PREVI low cost housing project in Lima. On many occasions he has been a jury member for national and international design competitions. He has been extensively involved with the Aga Khan Award for Architecture as a Master Jury Member and in other capacities. He has served on many national and international committees for architectural and urban design development.

Correa's architectural works have been published widely across the world since 1958 when he began his practice. He is the author of a book titled *The New Landscape* (Bombay: The Book Society of India, 1985; New York: Butterworth Architecture, 1989). The book has been published in the Russian language in the former USSR. Correa has also written numerous essays in national and international journals and books.

Correa has lectured at various universities across the world including Sir J. J. College of Architecture, Mumbai; Tongi University, Shanghai; University of London; Columbia University, Harvard University, Massachusetts Institute of

Technology and others. He has been the recipient of several awards including the Gold Medal of the Indian Institute of Architects (1987), the Preamium Imperiale of the Japan Art Association (1994), Royal Gold Medal of the Royal Institute of British Architects and Gold Medal of the UIA, besides others.

## **IDEOLOGY**<sup>1</sup>

### **Architecture as Art**

According to Correa, architecture as an art is “impure” as compared to the other fine arts of painting, music, poetry and so on. “We are not poets, we don’t sit back and wait for inspiration. Neither are we painters. If we don’t like a painting, we (can) just turn it away and say, ‘I’ll come back after two years.’ We are part of a ‘process’ which is part of a ‘bazaar’. If someone comes out and says, ‘will you design this house for me?’, you have the right to say no. . . . But once you enter the process, you have to make sure it ends up in a place you want (it to), and not feel sad about it.”

Thus, Correa thinks that despite the fact that there is an artistic side to architecture, an architect, unlike a painter or poet, cannot be entirely whimsical. Having entered the “process”, s/he is not only time bound, but is also limited by budget,

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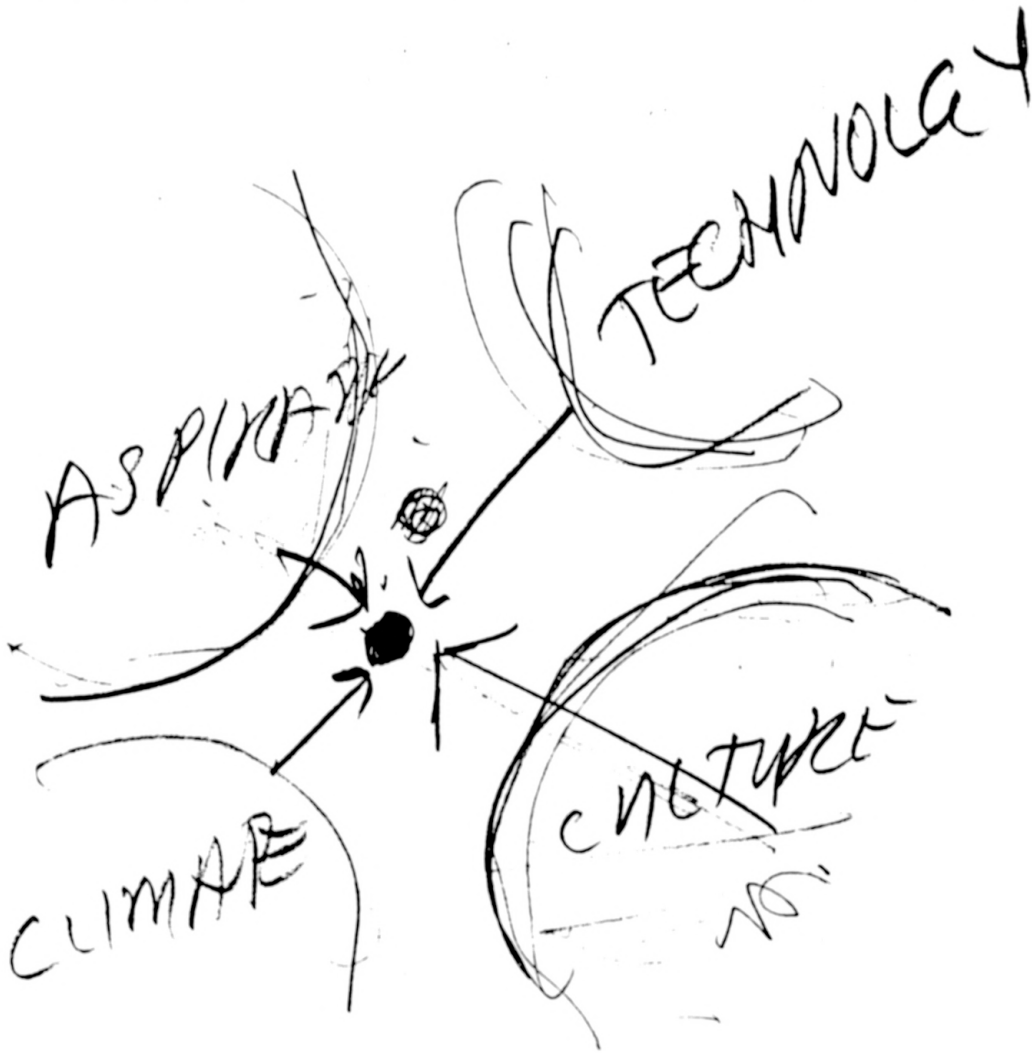
<sup>1</sup> Except where stated, all the information under this sub-title has been obtained from an unpublished interview given by Mr. Charles Correa to this researcher on June 10, 1997 in Mr. Correa’s office in Mumbai. Some of the views presented at this interview are reiterations and amplifications of the ideas already expressed in Correa, Charles. “The Public, The Private, and The Sacred” in *Architecture + Design: A Journal for the Indian Architect*, Sep-Oct 1991. New Delhi: Media Transasia (I) Pvt. Ltd., pp. 91-99; and Correa, Charles. “Vistas” in Steele, James (ed.). *Architecture for Islamic Societies Today*. London: Academy Editions, 1994.

availability of materials, technology, and so on. These elements, which are the commercial forces which dictate one's work in architecture, Correa calls the "bazaar". To ensure that an architect's work is seen through till its completion, within these forces of the "bazaar", Correa thinks that the temperament of the architect is as important as his/her talent. After all this, an architect is accountable for what s/he has created, and a mistake is unacceptable, according to Correa. The above factors make architecture an art distinct from the other arts like music, painting and poetry.

### **Components of Correa's Architecture**

Art for Correa, is a point in space (see point 1 in Correa's diagram on the following page) which is determined by two forces—culture and aspirations. (Architecture comes out of art and is determined by technology and climate also). Culture, for Correa, is a reservoir of what has already happened. It is almost static. If it changes, the change is very gradual. Culture does not influence changes in art (although art may be derived out of culture. What changes art, and subsequently culture, are the aspirations of a society. Aspirations, according to Correa, are very dynamic and keep changing constantly. These changes in aspirations are generally determined by world events and popular movements.

Art (point 1 in the diagram) may, at some time be governed more by culture than by aspirations. But suddenly, the aspirations of a society may undergo a



*Correa*

change. When this happens, art is more governed by the aspirations of a society, rather than by its culture. Thus, point 1 in the diagram, may move closer to the “aspirations”.

<sup>2</sup> This diagram was drawn by Charles Correa in an interview given to this author on June 10, 1997 at the office of the architect in Mumbai, India.

Hence, Correa says, art in a society keeps moving (in time) to and from culture and aspirations.

Architecture, due to its unique character, is governed by two additional forces—climate and technology. Climate is the physically manifested reality to which architecture has to respond. It is beyond the control of the architect and so an architect has to consider it when designing. Climate, therefore, affects architecture. “A building in (the cold parts of) North America and in India cannot be the same” says Correa.

The other force which affects architecture is technology. According to Correa, although technology does play a role in some other arts, it is not as “basic” as it is in architecture. An interpretation of this could be that change in technology in architecture may result in a change in form and therefore, the aesthetic—the entire appearance of the building, as well as the visual and spatial experience. On the other hand, technology in, say music, does not necessarily mean a complete change in that art. Thus, the four forces which govern Correa’s architecture are culture, aspirations, climate and technology.

### **The Interplay Between the Forces**

According to Charles Correa, therefore, a perfect piece of art in architecture is the result of the interplay between culture, aspirations, climate and technology. Correa then goes on to explain the concepts of “Transformation” and

“Transfer”. In the diagram, at a given time, point 1 is a perfect piece of architecture. A Gothic cathedral is cited as an example. In this example, the culture was Christianity and the aspiration was to reach God. Due to the cold climate, the cathedral had to be built in the form of a box, as against a possible courtyard configuration which is more suitable for warm climates.

The technology was limited to stone. But if, instead of stone, steel or concrete had been used, then the results would have been different. The flying buttresses would probably not have been built at all. The form would probably have been completely different and so also the tectonics—the entire aesthetic would have changed.

The reflection of this change in Correa’s diagram is represented by point 2. This means that there has been a “transformation” of expression. The climate, culture and aspirations have remained the same, but the technology has changed, resulting in a “transformation” of point 1 to point 2. Thus, if any of these four components change, the position of the point, which is a result of these four forces, changes.

But as against “transformation”, there is “transfer”. According to Correa, in the above example, if, while using steel or concrete, an architect still prefers to build a flying buttress, then s/he is merely “transferring” an expression from the past to the present.

To use another example to demonstrate the difference between “transformation” and “transfer”, Correa puts forth a hypothetical situation. As an architect, one can simply reproduce in India, mythic images of North America without bothering to make them relevant to the culture and aspirations of the Indian society. Or s/he could attempt to re-invent those mythic images to what makes sense in the climate, culture, aspirations and technology of the Indian society rather than imposing them. Transformation in this case, according to Correa, involves assimilation of that mythic image within the Indian society.

Both “transfer” and “transformation”, says Correa, are workable concepts. According to him, Postmodernism “transfers” images, but has been effective in America. People were happy seeing the resemblance to the past and it raised a lot of important issues in American society.

The difference between “transformation” and “transfer”, says Correa, lies in the fact that in accepting the “challenge of “transformation”, a society generates a tremendous amount of “energy” within itself. If, on the other hand, a society merely “transfers”, it weakens itself. To illustrate this point, Correa gives the example of Frank Lloyd Wright, whose architecture, he says, generated a tremendous amount of energy for America, especially its architectural profession. But now, that energy is dissipating due to the kind of architecture being practiced there (Postmodernism, in particular). Thus, Correa prefers to “transform” rather than “transfer”.

## Connection with the Past

In many of his works, Correa has attempted to connect with the past in a way that is not merely nostalgic. According to Correa, the connection with the past is done with two objectives in mind:

- (a) to show the roots of the society, and
- (b) to attempt a transformation, i.e. looking at the past with a twentieth century sensibility.

To connect to the roots of Indian society, Correa has identified three realms:<sup>3</sup>

- (i) the physical realm, i.e. the everyday pragmatic given,
- (ii) a domain where fashionable imagery of one kind or another is inevitably present,
- (iii) the “invisible cultural sub-stratum that rises, from time to time into the architectural unconscious of a particular region.”

The interplay of these three realms, argues Correa, is further modified by the way architecture evolves over time through the dynamic interaction between the four forces of climate, technology, culture and aspirations, which according to Correa, make his architecture.<sup>4</sup>

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<sup>3</sup> Frampton, Kenneth. “The Work of Charles Correa” in *Charles Correa: With an Essay by Kenneth Frampton*. London: Thames and Hudson, 1996, pp. 1-16.

<sup>4</sup> Ibid.



The physical realm, says Correa, is the way a building's form, shape, organization and so on, evolve due to the physical realities of a place. These realities could be climate, social structure, materials available, and so on. The Padmanabhan Palace in Trivandrum, an ancient city in South India, reputed to be the oldest wooden structure in India, is an appropriate example according to Correa. The design is determined by the climate of the region which is hot and humid. The Palace has a steep and high plinth, the ascending angle of which corresponds with that of the roof. Thus the plane of the roof and that of the stair are parallel. This form minimizes the need for enclosing walls to keep out the sun and rain, while allowing constant circulation of fresh air within. The line of vision from within is directed downward toward the surrounding lawns making it a refreshing sight in the heat and humidity prevalent in the region. Also, the absence of walls ensures cross ventilation to the maximum. Thus, the Padmanabhan Palace is a precedent that can be used to address the climatological concerns today.



Fig. 7.1: Section through Padmanabhapuram palace.

Simultaneously, the levels within the Palace display clearly the social structure of the time. The king would sit on a raised platform while the subjects would be confined to certain lower levels and restricted to certain areas. Using some of the above

climatological solutions and designing as per today's social structure is one way in which Correa connects with the past.

The second level at which Correa connects to the roots of a society is one in which "fashionable imagery" is used. For example, the Jawahar Kala Kendra at Jaipur and the British Council, New Delhi, both use imagery. These images demonstrate a connection to the local past, whether mythic or actual. Employing such imagery, according to Correa, links architecture to other arts. Correa thinks this link is very important as it adds layers of metaphorical and metaphysical dimensions to architecture. Besides, such imagery also helps bring back into balance the spatial tensions generated by the built form. For Correa, a mural need not just adorn a room. It can change the "dynamics" of the space in the room, making an empty space alive. In the past, architecture in India used imagery to project, according to Correa, "polemic ideas about ourselves and our relationship with the Non-manifest world."<sup>5</sup> The meaning of "Non-manifest" world becomes apparent in the discussion below, of the third level at which Correa connects to the roots of a society.

Frampton calls this third level "the invisible cultural sub-stratum".<sup>6</sup> Correa calls it the "deep structure of the mind—a response just to the process of living". This level has to do with the "Non-manifest world" which, according to Correa, is a world which has been in the mind of man since the dawn of existence. It underlies and

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<sup>5</sup> Correa, Charles. "The Blessings of the Sky" in *Charles Correa: With an Essay by Kenneth Frampton*. London: Thames and Hudson, 1996, p.27

<sup>6</sup> Frampton, Kenneth. "The Work of Charles Correa" in *Charles Correa: With an Essay by Kenneth Frampton*. London: Thames and Hudson, 1996, p.16.



Fig. 7.2: Changing the “dynamics” of space—a dome in the Jawahar Kala Kendra, Jaipur.

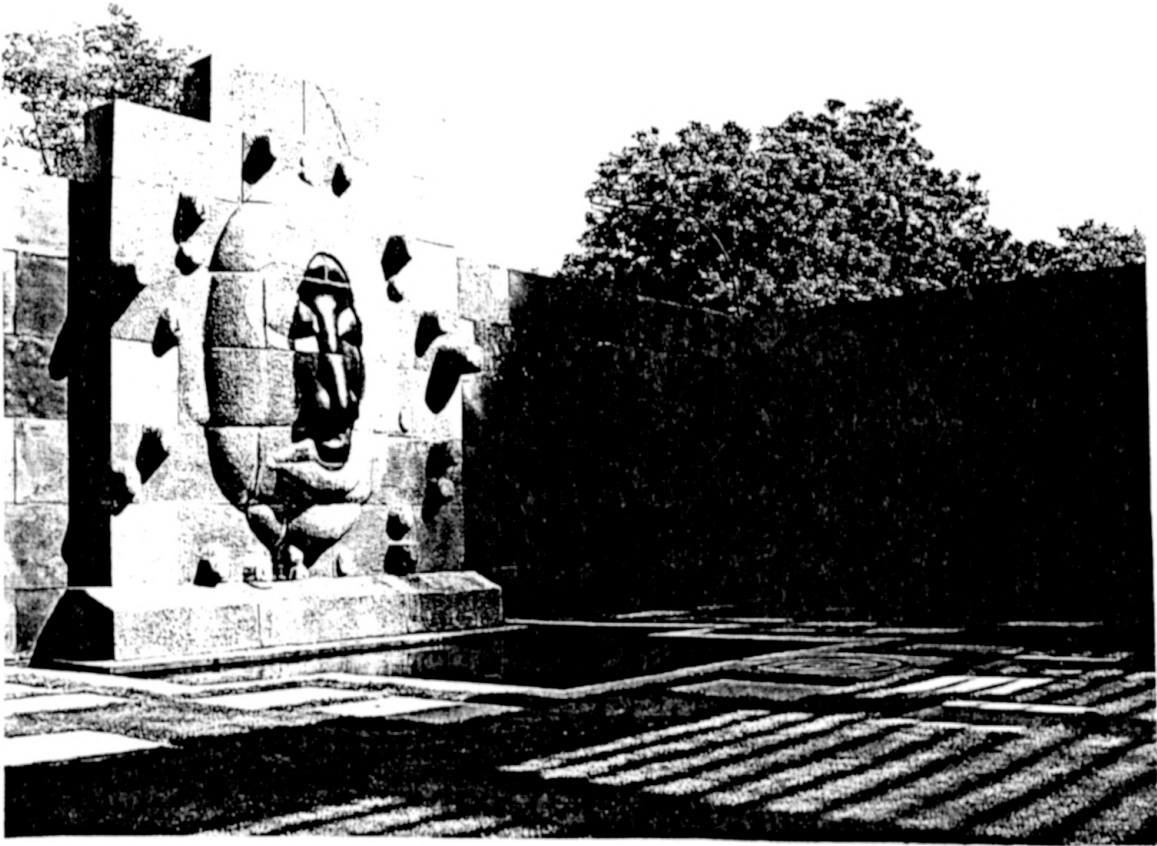


Fig. 7.3: Changing the “dynamics” of space.  
Sculpture in an open space—the British Council  
Division, New Delhi.

makes enduring the manifest world, which is the physical world which man experiences everyday. The principal vehicles through which man expresses this “non-manifest” world are religion, philosophy and the arts. Architecture too, says Correa, is generated by mythic beliefs expressing the presence of a reality more profound than the manifest world in which it (the reality) exists.<sup>7</sup> Correa gives two examples with relation to India to explain the “Non-manifest” world.<sup>8</sup>

<sup>7</sup> Correa, Charles. “The Public, The Private, and The Sacred” in *Architecture + Design: A Journal for the Indian Architect*, Sep-Oct 1991. New Delhi: Media Transasia (I) Pvt. Ltd., pp.91-99.

<sup>8</sup> Ibid.

According to Vedic thought, the world we see is only a part of our existence. The objects we perceive help us understand the non-manifest layers that lie underneath. Such non-manifestations are expressed, in Vedic literature, through *Yantras* (magic diagrams, according to Correa). One of these expressions, the *vastupurushamandala* forms the basis of traditional sacred Indian architecture. The *mandala* represents an energy field. It is a square divided into smaller squares creating a series 4, 9, 16, 25. . . . up to 1024. It is a diagram which represents patterns symbolic of the universe with relation to man. According to Correa, the Jains have another such reservoir of images in their “cosmographs”.

These mythic images underwent changes with the arrival of Islam in India—from *vastupurushamandala* to the Islamic concept of *char-bagh* (the paradise garden of Persia, an ancient concept which is an enduring feature of Persian art and architecture). Thus, cosmic analogues are replaced by Islamic myths of harmony between man and nature. Finally, with the arrival of the British, these myths underwent further changes. The focus now shifted to science and rationalism, “a fallout from the Age of Reason” according to Correa.<sup>9</sup>

The other example of “deep structure” according to Correa, is the connection man feels with the sky when walking out into an open courtyard. Besides the fact that courtyards were used for climatological purposes, at the “deep structure” level, they served to connect man to the sky and to the earth. This, according to Correa, is as

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<sup>9</sup> Correa, Charles. “The Public, The Private, and The Sacred” in *Architecture + Design: A Journal for the Indian Architect*, Sep-Oct 1991. New Delhi: Media Transasia (I) Pvt. Ltd., pp.91-99.

integral and central to man as is his body structure, “somewhat the way our brains are formed, our whole bodies are formed. . . (the way) we have memories.” The sky, to man, has always been the abode of the supernatural. It has had profound and sacred meaning through the history of man, according to Correa.

In warm climates like India, such open-to-sky spaces have been used in architecture since ancient times in various forms. Correa, therefore, has attempted to use what he calls the “ritualistic pathway”<sup>10</sup>—an unfolding of spaces along a sequence of (partially or completely) open-to-sky pathways. The “ritualistic pathway” is a concept used in the ancient Indian temples for circumambulatory rituals. An example, in Correa’s work, is the Handloom Pavilion, New Delhi.

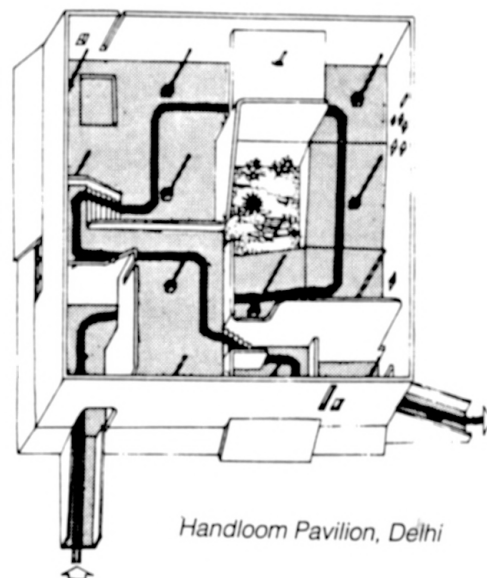


Fig. 7.4: The Ritualistic Pathway—Handloom Pavilion, New Delhi.

<sup>10</sup> Correa, Charles. “The Blessings of the Sky” in *Charles Correa: With an Essay by Kenneth Frampton*. London: Thames and Hudson, 1996.

We have seen above the three ways in which Correa connects with the roots of a society. The other reason why Correa uses the past has to do with “transformation” of expression in a society. Simply put, it is an attempt to view the ancient paradigms with today’s sensibility, thus making the past alive and valid in our consciousness today. Correa has attempted to apply the *mandala* to the Jawahar Kala Kendra in Jaipur, with the intention of “transforming” the *mandala* to the twentieth century, as against merely “transferring” it. In the 17<sup>th</sup> century, Maharaja Jaisingh used the *Navgraha* (a nine square *mandala*) layout to design the city of Jaipur. The city was to be built at the base of a mountain. In plan, one of the squares of the *Navgraha* happened to be located on the slope. Jaisingh, thus, moved the square on the diagonally opposite corner of the *Navgraha*, to accommodate the slope. Correa, in the Jawahar Kala Kendra,

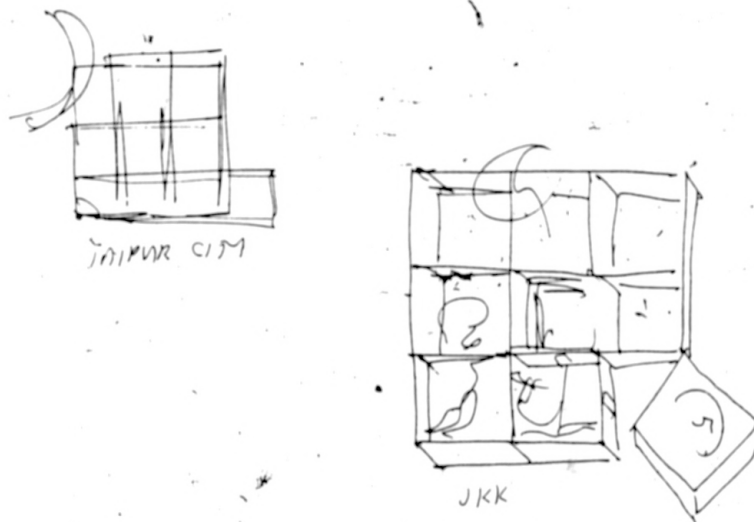


Fig. 7.5: “Transformation” of the Jawahar Kala Kendra, based upon the Jaipur model.

has adopted the same *Navgraha*, but has, like in the plan of the city of Jaipur, displaced one of the corner squares to create an entrance. Correa calls such a move, a “transformation”. A “transfer” on the other hand, would have meant merely replicating what Jaisingh did. Thus, Correa finds the past very important for architecture since it connects a people to the local roots while “transforming” the past to make it valid today.

### **Summary**

To summarize Correa’s philosophy, we have seen that for him, architecture is not a “pure” art like music and painting. This is because it is determined, in part, by commercial forces which Correa calls the “bazaar”. To create an architecture within these compelling forces of the “bazaar” an architect has to be unlike any other artist such as one who does painting or writes poetry. A poet or a painter can be whimsical and can afford to “wait for inspiration” while “standing in his ivory tower. But for an architect, temperament matters—the determination to see it through the end and “not feel sad about what you’ve done”. An architect is accountable for his actions.

For Correa, four forces act upon architecture in a society. These are culture, the aspirations of that society, the technology of the time and place, and the climate of the region. These four forces interact with each other to create a “perfect” piece of architecture for that society at that time. The four forces mentioned above, as a whole, interact at three levels. These are:



- (a) the physical realm, i.e. the everyday given,
- (b) the level of the inevitable “fashionable imagery”,
- (c) the non-manifest “deep structure” level of the human mind in a society.

It is important for Correa that he be able to relate to the past at the above three levels, to demonstrate the roots of a society, and to transform that past into today's present making the past alive and valid in the consciousness of contemporary society. To demonstrate these concepts in Correa's work and how they fit into the *Revised Taxonomy*, one of his recent buildings is now examined.

## CHAPTER VIII

### THE INTER-UNIVERSITY CENTRE FOR ASTRONOMY AND ASTROPHYSICS

The Inter-University Centre for Astronomy and Astrophysics (IUCAA) is a research facility for doctoral and post-doctoral level students of astronomy and astrophysics from various universities in India and abroad. IUCAA is located on the campus of the University of Poona, in the city of Pune, a couple of hundred kilometers from Mumbai (formerly Bombay), in the western Indian state of Maharashtra. The IUCAA was begun in 1988 and completed in 1992. The client was the University Grants Commission of the Government of India

### BACKGROUND

The IUCAA building is an attempt by Correa to express the contemporary understanding of the universe.<sup>1</sup> Expressions of humankind's understanding of the

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<sup>1</sup> As mentioned by Correa during the interview with this researcher, the IUCAA is a reaction to another of Correa's projects called the Jawahar Kala Kendra (JKK), an arts and crafts centre in the centuries old city of Jaipur, in northwestern India. Like some other works of Correa, the JKK is said to be a "medium of correspondence of physical, visible being with spiritual, invisible being." The "spiritual, invisible being" is analogous to the connection with the sky about which Correa feels so strongly. The Vedic diagrams for ancient Indian architecture are an example of such an expression of this connection to the sky. The JKK is a contemporary interpretation in architecture of these Vedic diagrams in the contemporary culture of the "Age of Reason"—an attempt to view the past with today's sensibilities. In the Vedic times, the cosmos had already been transformed into a concise ideogram—the *vastupurushamandala*. All the JKK does, says Correa, is to give that ideogram a three dimensional architectonic form. But the IUCAA is a different matter. The IUCAA has to arrive at an architectural form in the "Age of Reason". It is unlike the JKK which was an attempt to view the past with today's sensibilities. IUCAA cannot attempt to do the same since it is an expression in the "Age of Reason". Correa had to work directly from the images of outer space gleaned from radio telescope and satellite. Thus the two projects are representations of the understanding of the cosmos in two historical eras separated by thousands of years.

universe are seen in the form of ancient Indian ideograms like the *vastupurushamandala*. Few paradigms of today's "Age of Reason", according to Correa, have been transformed into such ideograms. Among the ones that have been, however, is  $E=MC^2$ . The new understanding of the cosmos in the "Age of Reason" has developed its own icons in the form of radio telescopes and Black Holes, with their vortices of imploding forces. Such icons, says Correa, animate our own mythic notions of the nature of the universe. Can these modern cosmic images be expressed in architectural terms? Correa, therefore, aims to arrive at an architectural form appropriate in the "Age of Reason".

## **THE STRUCTURE OF THE COMPLEX<sup>2</sup>**

*"Hence the swerving black walls surmounted by glossy black granite (reflecting the blue sky and the passing clouds) and the patterns of the built form itself, exploding from the central vortex of the stone kund (an ancient pattern, here modified to symbolize the Expanding Universe in which we dwell)."*<sup>3</sup>

Hence, in the design of the IUCAA we have a central *Kund* (a term used to denote a sacred pond in which the devout may symbolically cleanse themselves by taking a sacred bath or by pouring offerings) representative of a celestial explosion from which the rest of the built form scatters itself.

*"One arrives down a road between two swerving black walls of local basalt stone, surmounted by a course of a deeper black*

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<sup>2</sup> Due to the large scale of the project, the description and study of IUCAA will be limited to the academic area only.

<sup>3</sup> Correa, Charles. *The Ritualistic Pathway: 5 Projects—A Portfolio of Architecture by Charles Correa with Essays by Kenneth Frampton, John Russell, Jyotindra Jain, Gautam Bhatia*. Bombay: Copyright Charles Correa, 1993.

*Kuddapah stone, topped finally by a glossy black polished granite (which reflects the sky and clouds above). Black on black on black: the visual structure of Outer Space.*

*These black walls draw one into the entrance, between two columns of exposed concrete which de-materialize at the top into a soft blue. Ahead and to the right, lies the kund—here transformed into a metaphor for our expanding universe. The stones along the edges fly apart with centrifugal energy, setting up the diagonals that connect to the other facilities into the centre of the campus: the Computer Centre to the Northwest, the Hostel to the Southeast and the Visiting Faculty Housing that lies beyond.”<sup>4</sup>*

Within the *kund* are larger than life fibreglass figures of four prominent scientists: the sage Aryabhatta (who more than 15 centuries ago established that the earth was round), Newton (sitting under a tree looking at a fallen apple), Galileo (gesturing up to the Dome of Heaven) and Einstein (time in his pocket watch, contemplating the relativity of space).<sup>5</sup>

A dome opens onto a pathway and leads across the campus road to the faculty housing to the northwest of the site. This dome has a symbolic relevance in terms of time. Correa thought that it was important that the surface of the main dome carry a message crucial to the scientific values of this century—something similar to the Ayurvedic cosmograph of the Vedic times. Thus, the scientists of the Centre plotted a map of the night sky on the day the project broke ground, as viewed from Pune at the time of the laying of the foundation stone which was 8.30 p.m. on December 29, 1988. This map was incorporated into the form work of the dome, using glass replicas of the stars, with exact precision in terms of the dimensions and location of

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<sup>4</sup> Charles Correa: *With an Essay by Kenneth Frampton*. London: Thames and Hudson, 1996, p. 206.



Fig. 8.1: The swerving walls of IUCAA.

Fig. 8.2: The central vortex of the kund, with stones flying with centrifugal energy. Two of the four statues mentioned are also seen.



<sup>5</sup> Ibid., p.207.

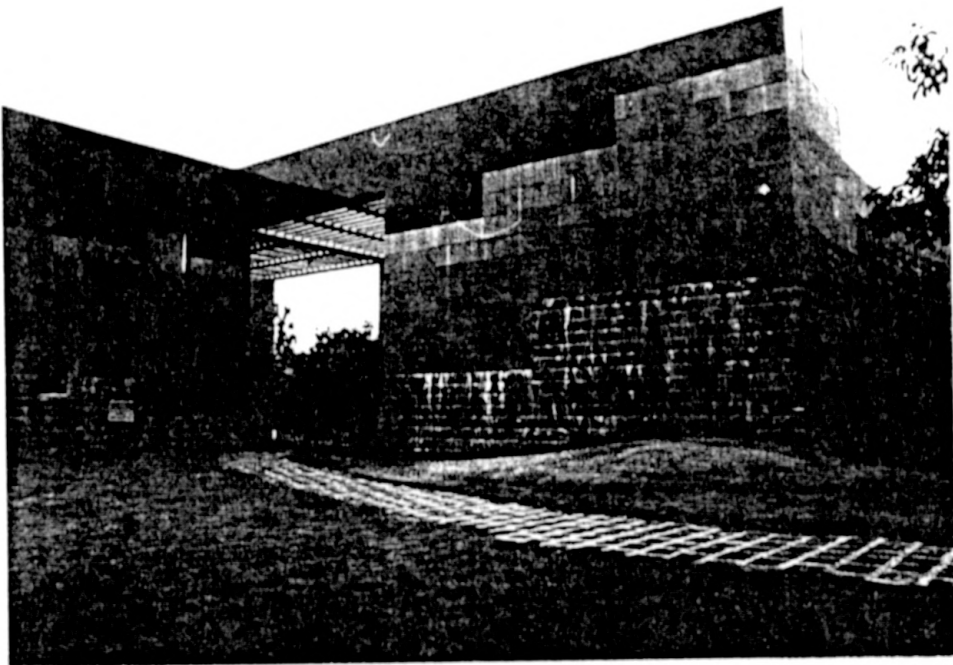
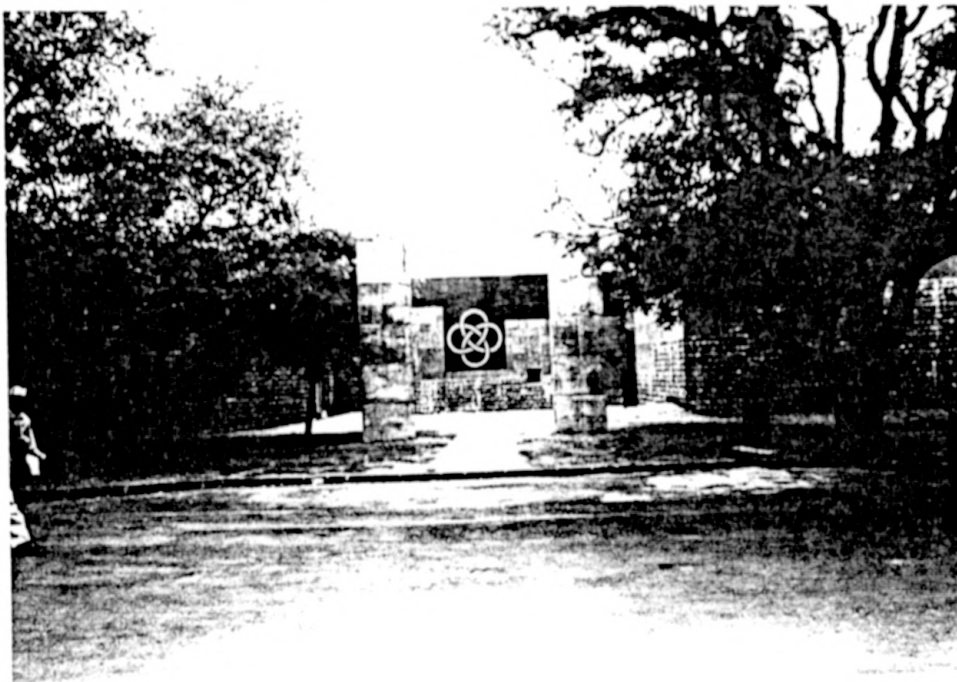


Fig. 8.3: Black on black on black: the visual structure of Outer Space.

Fig. 8.4: The two columns of exposed concrete which dematerialize into the sky.



the stars, before the concrete was poured. The result is that when one walks under the dome and looks up, the glass replicas shine like the night sky at the very moment the project broke ground. Thus the IUCAA is grounded in *time* and *place* as measured relative to the stars.

To the south of the *kund* lies the administrative area which also contains the faculty offices. Thus, as one enters through the southeastern corner of the *kund*, to the left is the reception lobby and the administrative area. This corner is a part of one of the two “ritualistic pathways” of the academic building. The concept of a “ritualistic pathway” is a dominant feature in Correa’s recent work. The term is devised by Correa to correspond to the ancient Indian pathway along which a sacred unfolding of open, semi-open and covered spaces takes place. The ancient Indian temple complexes employ this concept as a circumambulatory pathway—*pradakshina*. The movement along these ancient pathways is said to be exhilarating on the skin due to the subtle variations of the sensations of coolness and warmth on the skin coupled with the intermittent exposure to the sun’s rays and its light. This concept has been the inspiration behind at least three of Correa’s exhibitions. The first of these exhibitions was held in 1993 in London and was titled “The Ritualistic Pathway”. The next exhibition was a traveling exhibition by the same name and was held in Bombay, Delhi and Madras in 1994. In 1995, another exhibition called “The Blessings of the Sky” was held in Tokyo.



Fig. 8.5: The “sky dome” and the cosmograph.



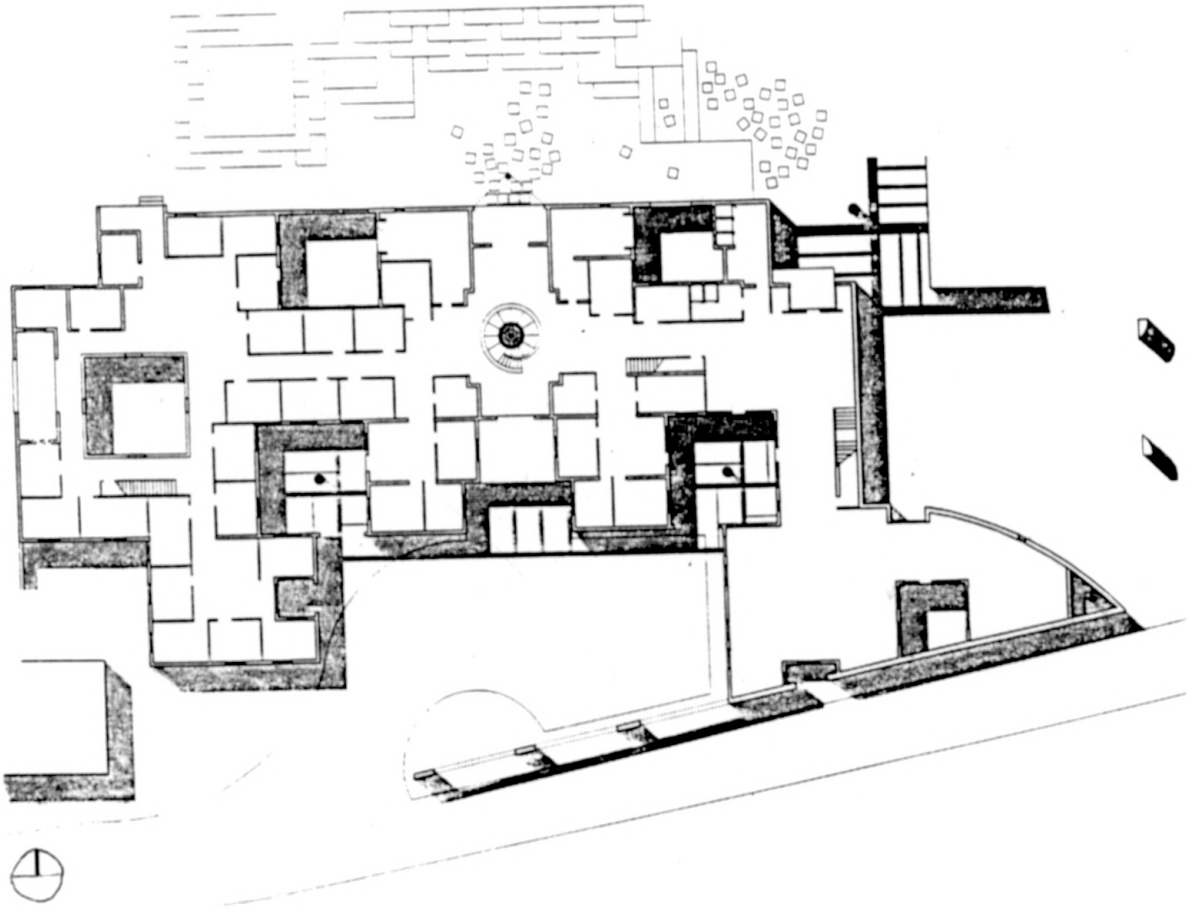


Fig. 8.6: Plan of the administration area.

The IUCAA is an effort at reproducing such a movement within a building, a recreation of the experience of entering a house around a courtyard after walking in the hot-humid climate of western India. But instead of a single pathway, Correa has designed the building around two pathways—one leading from the administrative area to the student hostels, and the other leading to the lecture halls and the computer court to the north.

Before entering the reception area, at the main entrance gate located at the southeastern end of the building, is a pergola. Thus the “ritualistic pathway” begins in a

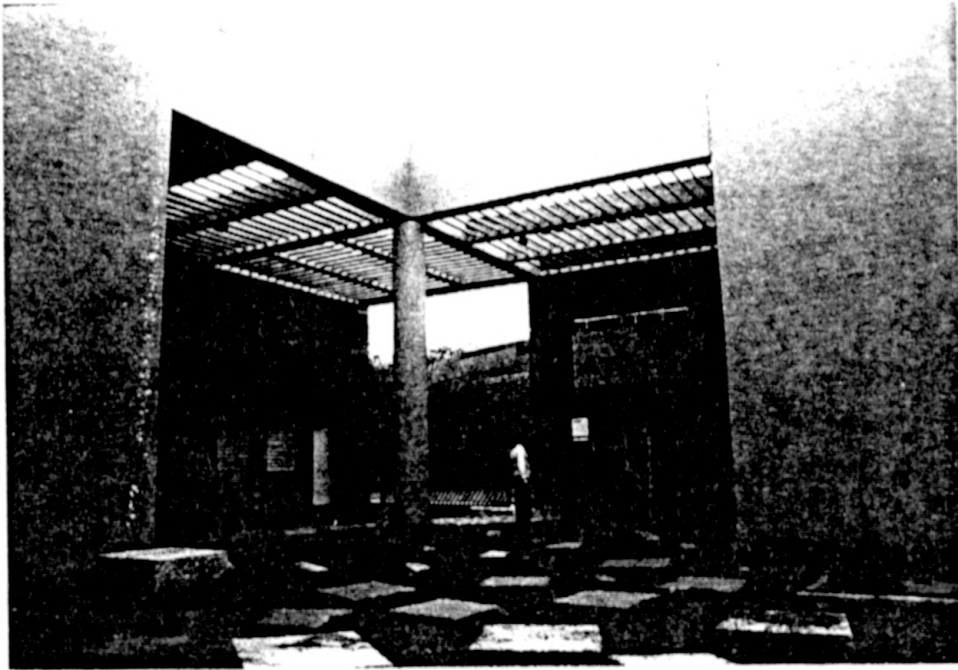
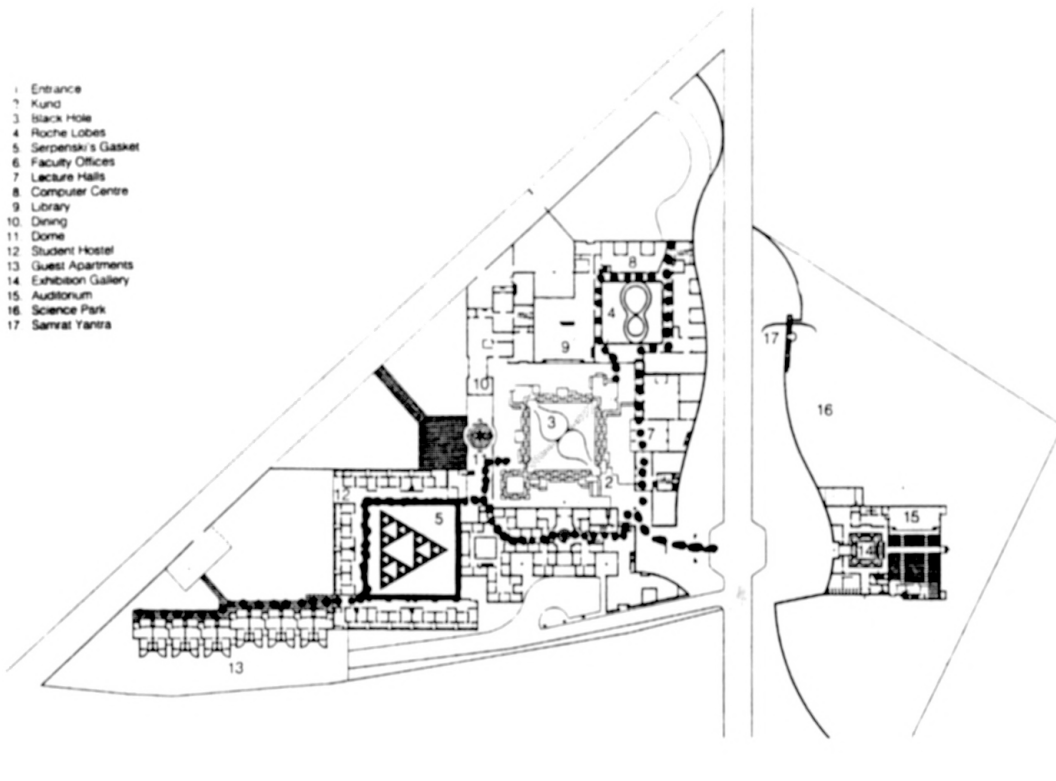


Fig. 8.7: Light filtering through the entrance pergola.

Fig. 8.8: The two “ritualistic pathways”.



semi-covered environment with the light filtering through the pergola. One then moves into the reception area which is lighted by a small courtyard in the center of which is a column supporting two beams at right angles to each other at their point of intersection. The beams form the framework of a pergola. Under the pergola are some plants. The glass panels separating the reception area from the court are operable to allow for ventilation.

Down the hallway from the reception area, one is led to another lounge which is the center of the part of the complex containing faculty offices. This area is marked by a working model of Foucault's Pendulum (see fig. 8.13), a heavy metal ball suspended from the double height ceiling of the atrium. The pendulum is said to shift its plane of movement in accordance to the rotation of the earth. The faculty offices are situated on the ground and first floor. The corridors around the atrium on the upper floor are lighted by five circular fibre-reinforced plastic skylight panels which admit diffused sunlight. The pendulum is suspended from one of these skylights. The atrium space has doorways on the north and south facilitating circulation of people and wind into the *kund*. The "ritualistic pathway" leads further into another courtyard around which are situated the offices of junior faculty members. This courtyard also contains vegetation, but no column and pergola. Further down this "pathway", across on the western side of this courtyard is the student hostel. This courtyard, which is the second largest in the complex, contains astronomical patterns in the form of a triangle, the discovery of which is credited to a scientist named Serpenski. The courtyard is, therefore, called "Serpenski's Gasket".

On the southwestern corner of this courtyard is an opening which leads to the visiting faculty residential area. This portion is the terminal point of the “ritualistic pathway”. The northeastern corner of Serpenski’s Gasket opens onto the *kund* from under a pergola which leads to the “sky dome” described earlier. Across the dome is the cafeteria. All along this pathway are variations of direct and diffused sunlight, dark and bright areas, static air and circulating winds, and cool and warm areas. The overall effect as experienced by this author is indeed exhilarating, not just with relation to the sensation on the skin, but also visually. There are variations in levels and directions at certain key points on the pathway which add to the experience.

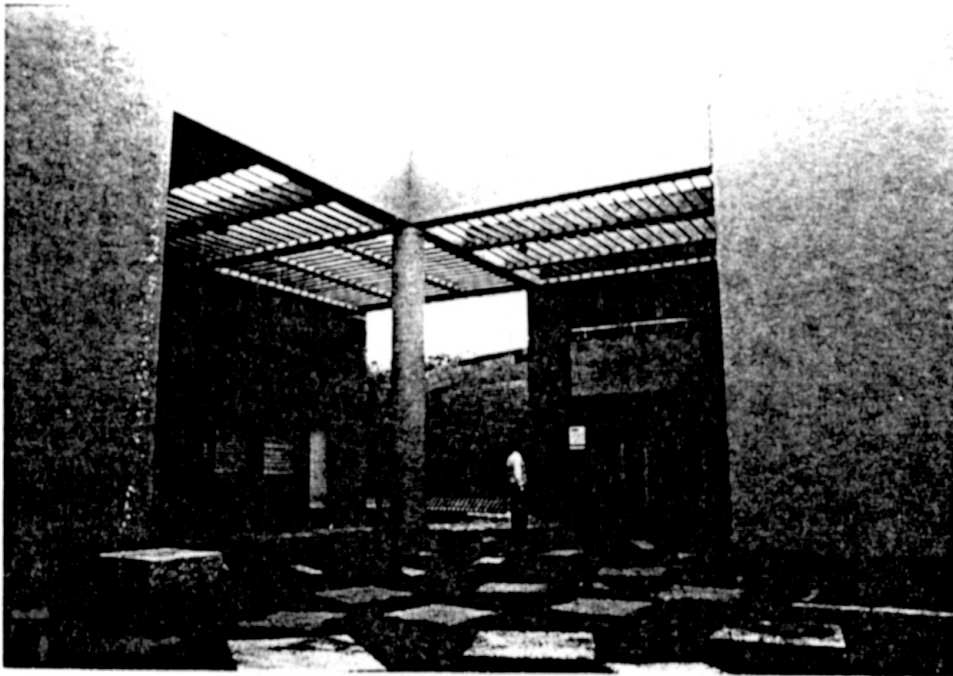


Fig. 8.9: Looking back at the entrance. To the right is the reception lobby.

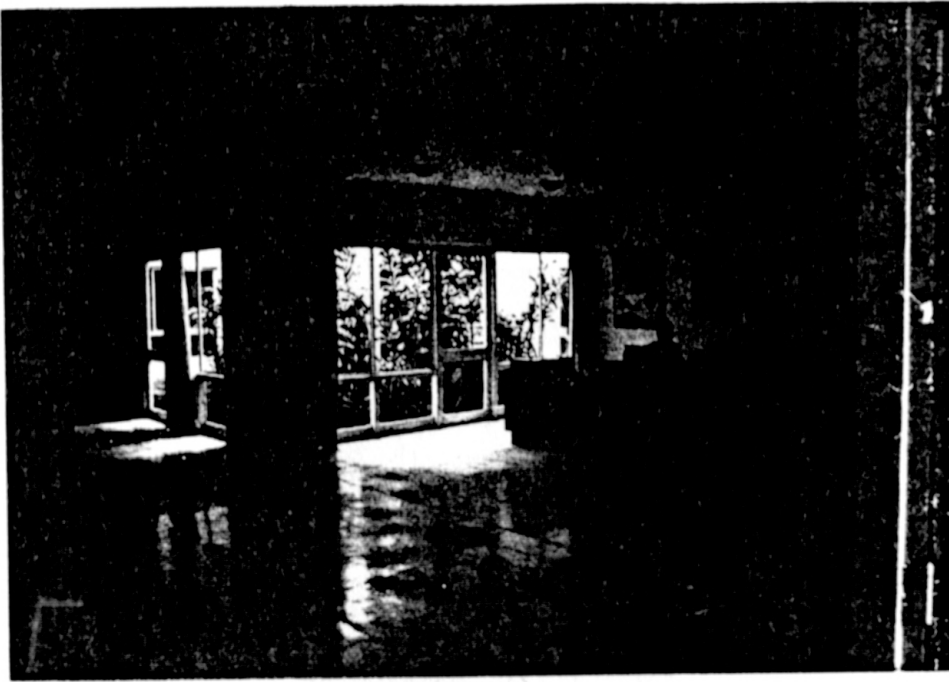


Fig. 8.10: The reception area.

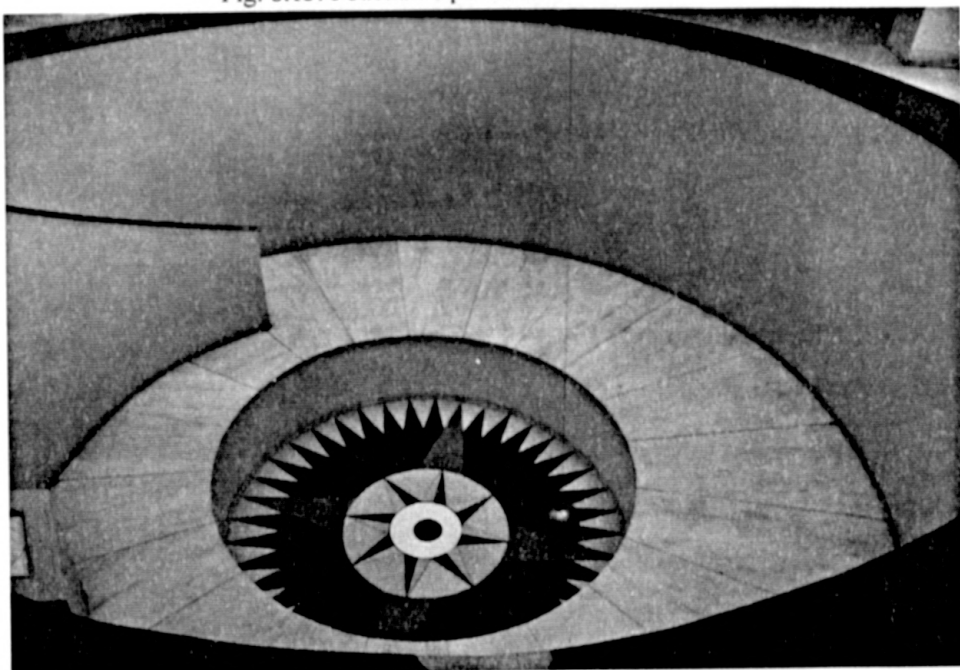
Fig. 8.11: Courtyard behind reception desk.





Fig. 8.12: Down the hallway from the reception.

Fig. 8.13: Foucault's pendulum.



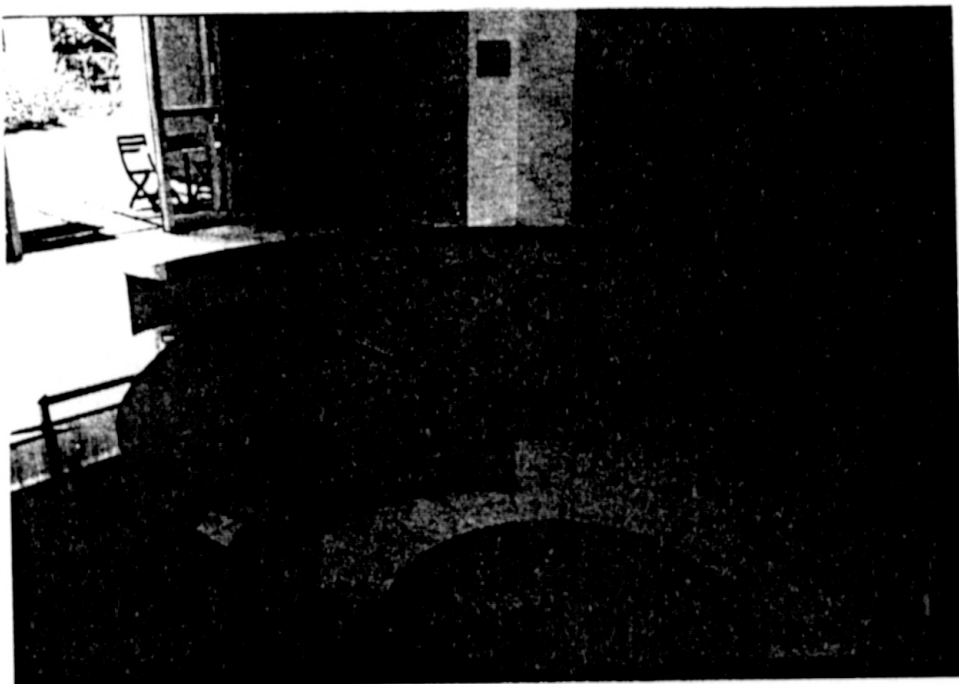


Fig. 8.14: Opening to the south of the pendulum.

Fig. 8.15: Opening to the north of the pendulum.



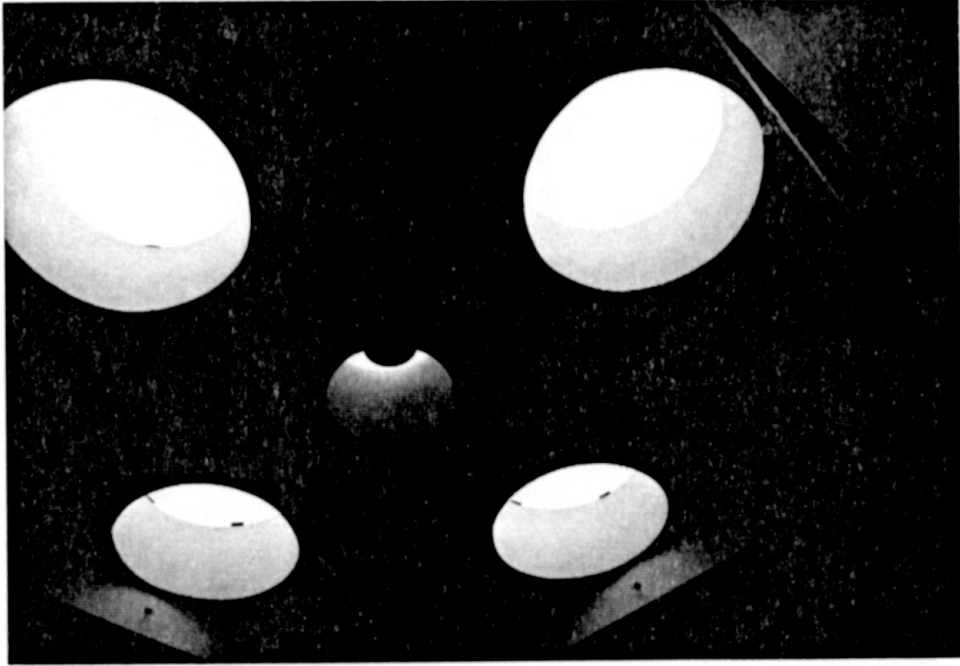


Fig. 8.16: The pendulum suspended from the skylight.

Fig. 8.17: The courtyard in the junior faculty office area.





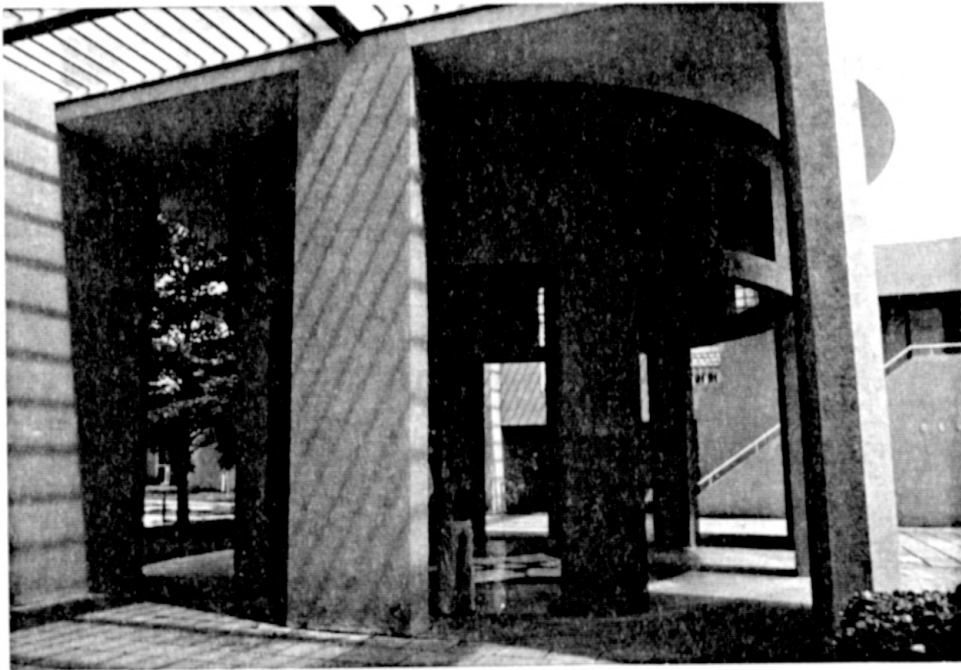


Fig. 8.18: The dome enclosure and the cafeteria beyond.

Fig. 8.19: Serpenski's Gasket—students' hostel.



The other pathway which leads to the lecture halls and computer areas is shorter in length. A visitor is taken along a covered corridor facing the *kund*. Along this length, the corridor is walled on both sides with larger window-like openings which expose the *kund*. But suddenly the corridor opens onto a large covered space which is open to the east and to the west. Following this open space, the pathway continues along its original axis again into a walled enclosure before opening on to the *kund*. At this point, the pathway leads into the computer court to the north and to the library to the west of the computer court. The computer court is the third most significant court after the *kund* and Serpenski's Gasket. This court is separated only physically from the *kund*, and not visually. The corridor which leads to the library on the west of the computer court is the dividing element.

The computer court contains a re-creation of the Roche Lobes, a phenomenon which occurs when stars are aligned in pairs. This re-creation is done using two pre-existing trees around which the court is designed. The pathway leads to the north of the computer court, opening onto research labs on the right and culminating finally in a garden after bypassing the computer rooms on the left.

This experience is similar to the "pathway" on the south of the building, except that the variations in light, wind and temperature are of a different nature due to the lack of an opportunity to use pergolas, and due to the shorter route. Because of the sensitive nature of research being conducted inside, however, this "pathway" is intended to be used by the students and faculty only. This author was not allowed to go into any of

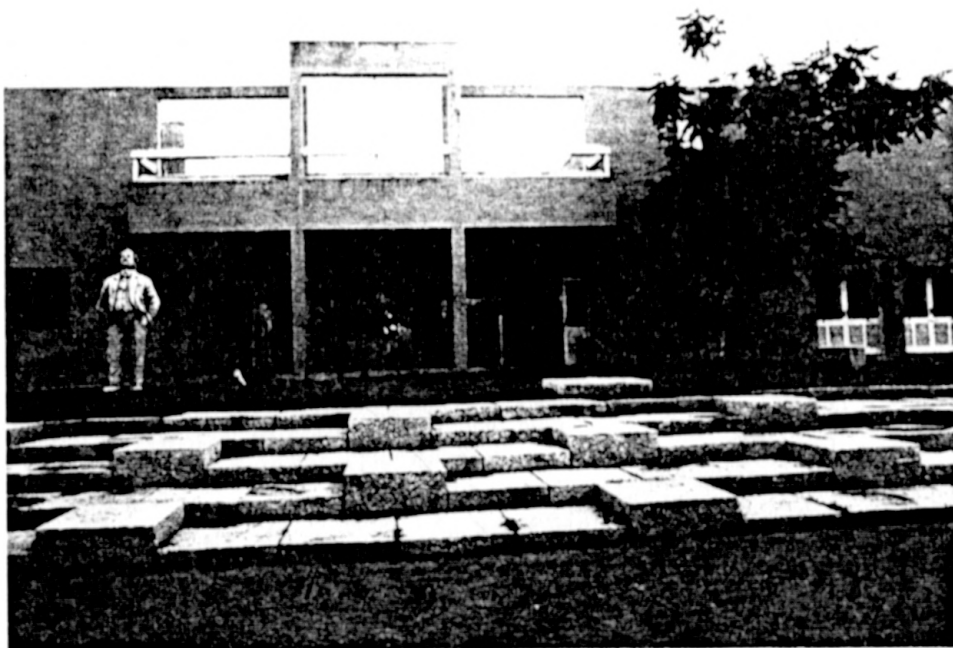


Fig. 8.20: The sudden semi-open space within the north-south "ritualistic pathway".

Fig. 8.21: The north-south "ritualistic pathway" leads to the computer court across the northern enclosure of the *kund*.





Fig. 8.22: The Roche Lobes in the computer court.

Fig. 8.23: The pathway goes on toward the garden (deep to the right in the image).



the rooms in the complex except the cafeteria. But the plan shows that even the rooms into which the “pathways” lead are arranged around small courtyards to facilitate light and ventilation. This enables the complete elimination of air conditioning and artificial light throughout the building in a climate which is often hot and humid. The design displays an efficient use of the abundant light available in this region, enabling the conservation of expensive electrical power.

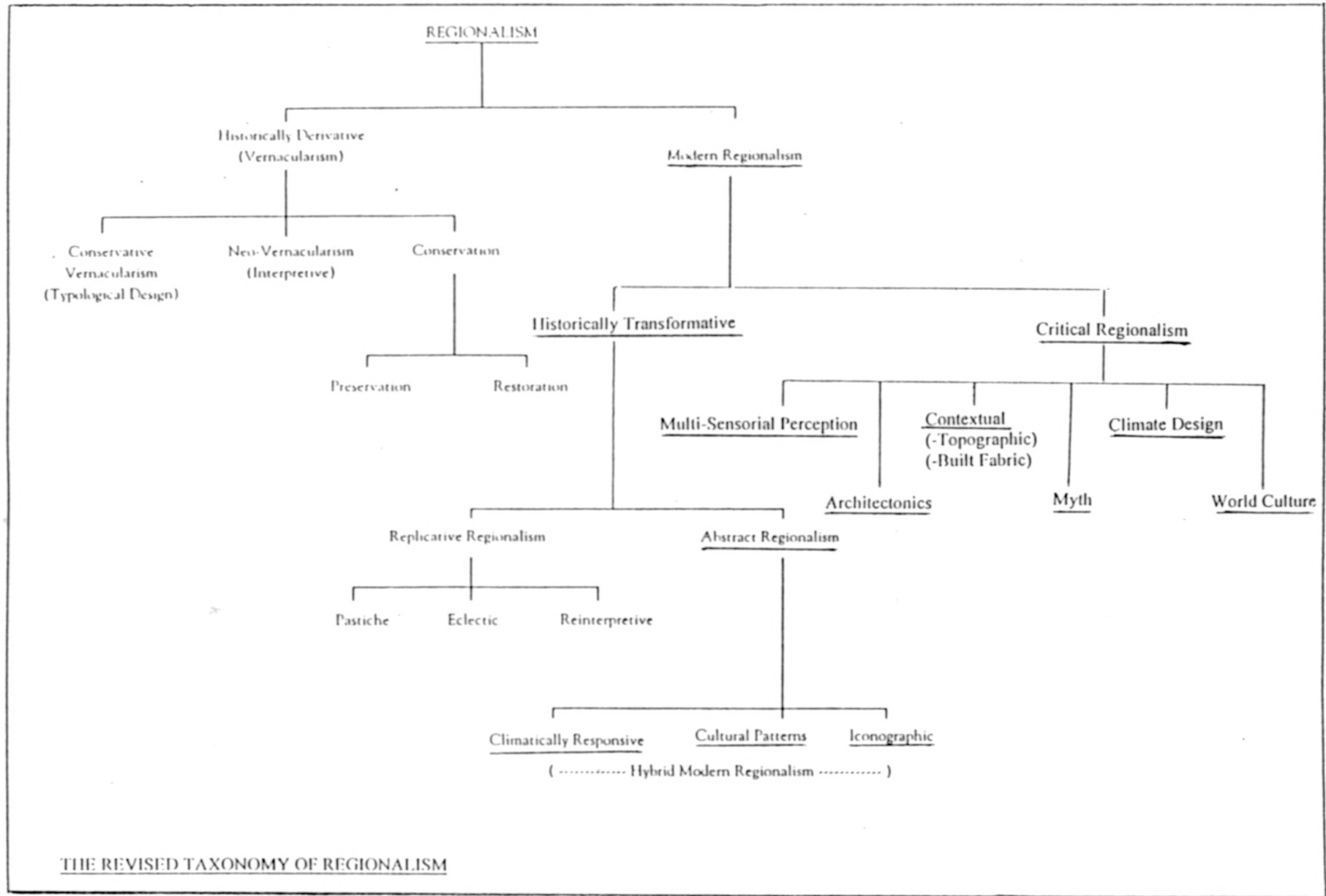
### **APPLICATION TO THE REVISED TAXONOMY OF REGIONALISM**

We will now attempt to examine the building within the framework of “Abstract Regionalism” and *Critical Regionalism* as seen in the *Revised Taxonomy of Regionalism* reproduced again on the following page. “Abstract Regionalism” has three branches under it—“cultural patterns”, “climate response” and “iconography”. We will consider each of these in relation to the IUCAA.

#### **The IUCAA as “Abstract Regionalism”**

##### ***“Cultural Patterns”***

Suha Ozkan and Robert Powell have not adequately defined what they mean by “culture” in either of the two publications which put forth their *Taxonomy of Regionalism*. Although, when exploring “Abstract Regionalism” they imply that abstracted elements or cultural patterns from the past are used to derive form, the



abstracted elements/qualities mainly relate to the region's built heritage—the massing, the solids and voids, use of light, sense of space and structural principles. The “Abstract Regionalism” branch is not a re-interpretation, but it is transformative of the past into the language of contemporary Modern architecture. An attempt is made to define (in terms of architectural elements) the prevalent culture of a region.

“The line which separates a solemn, praiseworthy, regionalist achievement from a worthless pastiche or a potpourri of the past, is very thin and delicate. In the division of the two we still do not have any other criteria than that we have developed with modernism.”<sup>6</sup> Thus we see that although the two authors have attempted to convey what they mean, it appears their definition of “culture” and its “patterns” is still not clearly spelled out. In the absence of such a concrete definition, one is left with the definition of the term offered by the architect whose work is being considered.

Correa's ideology speaks of culture in relation to the aspirations of a society, both of which together are said to find expression in art. As a practical art, according to Correa, architecture is also derived out of these two aspects. But, in addition, it is modified by climate and the technology available at any given time and place. Culture and the aspirations of a society lie at the “deep level”—the sacred invisibilia of a society, rather than at the “physical level” and the level of “fashionable imagery” defined earlier in Correa's ideology. The imagery and values associated with culture are a direct

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<sup>6</sup> Ozkan, Suha. *Introduction: Regionalism Within Modernism*, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 14.

consequence of culture *and* the aspirations of a society. The images then lie at a more superficial level which is not the “deep level”, but the level of “fashionable imagery”, which, like the other two levels, is also important. But, according to Correa, architects often neglect the “deep level” and use only the images which are at the superficial “fashionable imagery” level. This results in loss of contact with the *aspirations* of a society, thus making it unimportant for that society. Such a building, therefore, fails in its objective to strike a chord in that society.<sup>7</sup>

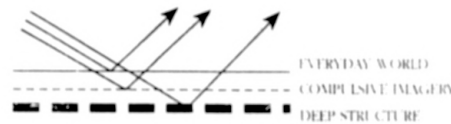


Fig. 8.24: The three “levels” in Correa’s ideology.

The “deep level”, i.e. the sacred invisibilia of a society, does not mean only religious values according to Correa, but it also has to do with nature, the primordial, and the mythic. In other words, the “deep level” refers to elements which are buried deep within the subconscious of a society. Correa cites the examples of the Japanese tea ceremony and the Spanish bull fights as being buried within the subconscious of the culture of those societies in the “mythic” sense. The subconscious level for a society living in a warm climate is invoked by witnessing or experiencing a

<sup>7</sup> Correa, Charles. “Vistas” in Steele, James (ed.). *Architecture for Islamic Societies Today*. London: Academy Editions, 1994.



house around a courtyard. As has been mentioned earlier, such a house, for a person from a warm climate, implies the connection of man to the sky which is the abode of the supernatural and hence, the sacred. Thus, it is appealing not just at the level of the subconscious in the “natural” and “primordial” sense, it is also a sacred expression at the “deep level”.<sup>8</sup>

The scientific and spiritual explorations of the Vedic era are associated with the Hindu religion in India. Indian society is deeply religious by nature. One can, therefore, identify religion and the myths associated with it as being in the subconscious of the Indian society, at the “deep level”—the sacred invisibilia, in the literal sense of the Correa’s term. During the Vedic times, according to Correa, architecture was associated with the cosmos. This was the “culture” at the time. As has been explained before, according to Correa, India has gone through two such basic shifts in the culture paradigm.

It is in the second basic shift in the culture paradigm, i.e. in the “culture” of this Age of Reason, that Correa is trying to display the aspirations of the Indian society. He does this by using the “sacred invisibilia” at the “deep level”. The sacred invisibilia, as Correa has said, may be expressed not just in the religious sense, but also through nature, the primordial and the mythic. How does the IUCAA display these features and therefore, fulfil the criterion of expressing “cultural patterns” in the *Revised Taxonomy*? The following pages will be an attempt to answer this question.

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<sup>8</sup> Correa, Charles. “Vistas” in Steele, James (ed.). *Architecture for Islamic Societies Today*. London: Academy Editions, 1994.

The very layout of the IUCAA is analogous to the house around a courtyard which Correa says, touches the subconscious of a person from a warm climate. The experience is similar to what Correa describes—the connection man feels with the sky when walking out into an open courtyard. This connection is at the “deep structure” level.

At the mythic level, the use of the “ritualistic pathway” connects the building to the roots of Indian society, to the “culture” of the Vedic times which originated before the first shift in the Indian culture paradigm. The “ritualistic pathway” is reminiscent of the *pradakshina*, the circumambulatory ritual in ancient Hindu temples. Again, this makes the connection to the past a “sacred” connection in the religious sense at the “deep level”.

Thus, the courtyard layout and the use of the “ritualistic pathway” connects the IUCAA to the “deep level” of Indian culture in the “Age of Reason”. The second aspect in the “cultural patterns” branch of the *Taxonomy* is the use of mythic imagery. The four statues in the *kund*, the *kund* itself and the Ayurvedic cosmograph under the “sky dome” are the three mythic symbols which connect this building to the past of the Indian society.

The use of the “ritualistic pathway” also fulfils Frampton’s interpretation of “myth” as a characteristic of *Critical Regionalism*. “Myth” means the local “schools” of culture which may include the ideological strategy of an architectural “school” in that area. Through these schools, the region can become culturally resistant against the onslaught of universalizing forces. Any self-consciously created culture within a region, according to Frampton, can be called a “myth” of that region.<sup>9</sup> These “myths”, for Eastern societies, can also include cultural myths from the ancient past of a culture. Thus, the “myths” of a region should be manifested through its architecture. An example Frampton gives is Tadao Ando’s “Church of the Light” in Japan.<sup>10</sup> In this Church, Ando has used the ancient spatial concepts of *Shintai* which relate to the religion of *Shintoism*. Ando, Frampton asserts, has reinterpreted this concept and applied it to the design of the church.

In an almost similar situation, Correa has applied the ancient Indian concept of the “ritualistic pathway” to the IUCAA. Perhaps, the use of the *kund* may also fit into Frampton’s definition—an ancient concept used for the purpose of relating the past of the local culture with the IUCAA. The incorporation of both these concepts reinforces the existence and contributes to the sustenance of the “local ‘school’ of culture” (referred to above) of ancient India. Thus, it appears that the IUCAA fulfils Frampton’s condition of “myth” as the basis of regional architecture.

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<sup>9</sup> See footnote number 16 on p. 80 of this thesis.

Of the four statues in the *kund*, the statue of the sage Aryabhatta, who is said to have discovered more than fifteen centuries ago that the world was round, connects the present culture of the “Age of Reason” to the ancient culture of the Vedic times. The remaining three statues of Newton, Einstein and Galileo establish the connection of the IUCAA with the other parts of the world in the universal “Age of Reason.” The installation of the statue of sage Aryabhatta conveys the contribution the sage has made to the astronomical investigations of today, establishing a continuum in the research of Outer Space in Indian society since ancient times. This also demonstrates the “aspirations” of Indian society to continue to contribute to the exploration of Outer Space in the universal “Age of Reason”. Thus, this statue establishes the connection with the subconscious of the Indian society at the “deep level” in terms of aspirations and culture. Within the culture aspect, there is a connection to the past, to demonstrate the roots of IUCAA, made through the use mythic imagery in Frampton’s sense. The statue, by itself, is at the level of imagery and values which arise out of the “deep level” made up of culture and aspirations.

The incorporation of the *kund* in the IUCAA is also significant. The *kund* is a sacred symbol with roots in Vedic times. Although originally, a *kund* is a water pond or container within a building or courtyard, it is nonetheless a depression in a surface. In the absence of water, Correa has used a signifier to represent water by using the stepped well pattern of ancient Gujarat (a state in western India) along the periphery of the *kund*. Thus the absence of water has been accounted for through the provision of the stepped

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<sup>10</sup> In a personal conversation between this author and Kenneth Frampton at Kansas State University on February 12, 1998.

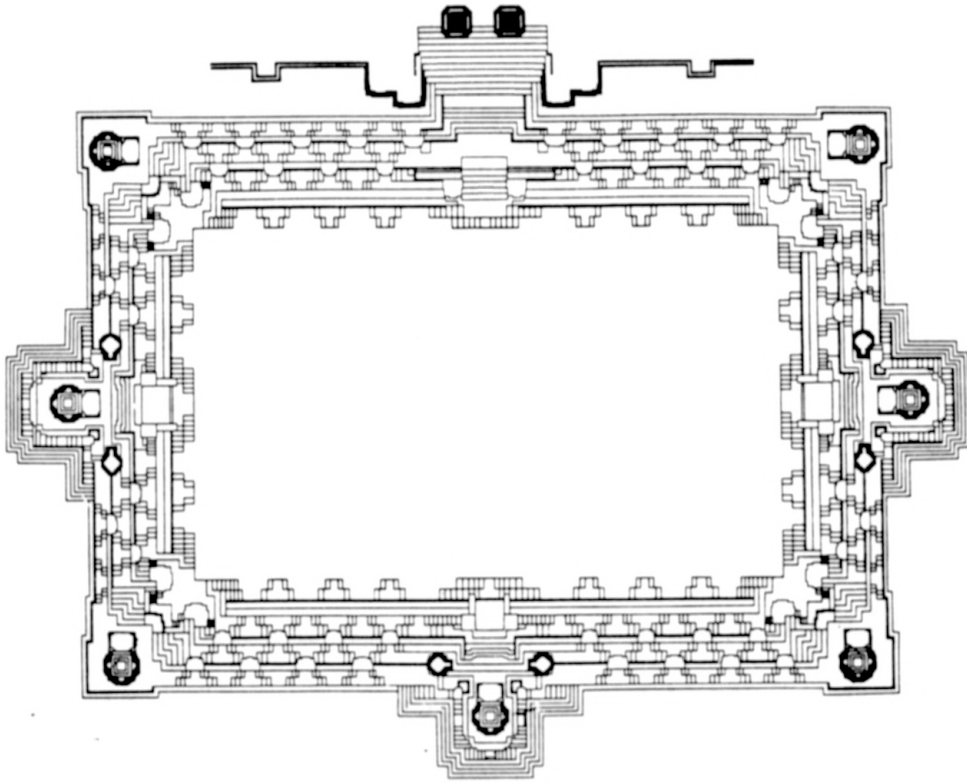


Fig. 8.25: Plan of the stepped well (kund) at Modhera, Gujarat (11<sup>th</sup> century A.D.).

pattern which has its origins in the Vedic times. The *kund*, being a depression, is also used as a metaphor for the Black Holes of Outer Space thus connecting the present scientific exploration in the culture of the “Age of Reason” to the Vedic roots of Indian society. The connection to the past has sacred connotations due to the use of the word *kund*. Thus, the *kund* shows the past, present, the mythic and the sacred in Indian society, making it touch the “deep level” of the Indian society.

The ancient cosmograph of Ayurvedic origin showing the position of the seasons in India in relation to the constellations is reproduced in the floor under the “sky dome”. Again this reproduction, in conjunction with the *kund* and the statue of sage

Aryabhatta, displays a plurality which seems to emphasize that the building is located in the nation of India and has strong Indian roots. The cosmograph is a mythic image with religious connection to Hinduism. It dates back to the Vedic times. Its use directly below the “sky dome”, which is a factual reproduction of the position of the stars in the same broad region as the origin of the cosmograph (i.e. India), displays the difference in the methods of space exploration between the two cultures—one based purely on observation, the other based purely on mathematical calculations. In this sense, the use of images in Correa’s IUCAA is truly polemic, displaying the understanding of one subject over the span of thousands of years over two different cultures. The juxtapositioning of these two diagrams seem to represent the transformation of Indian society over the centuries and how today, it is joining the culture of the “Age of Reason”. Thus, the diagram in conjunction with the “sky dome” not only displays the aspirations of the

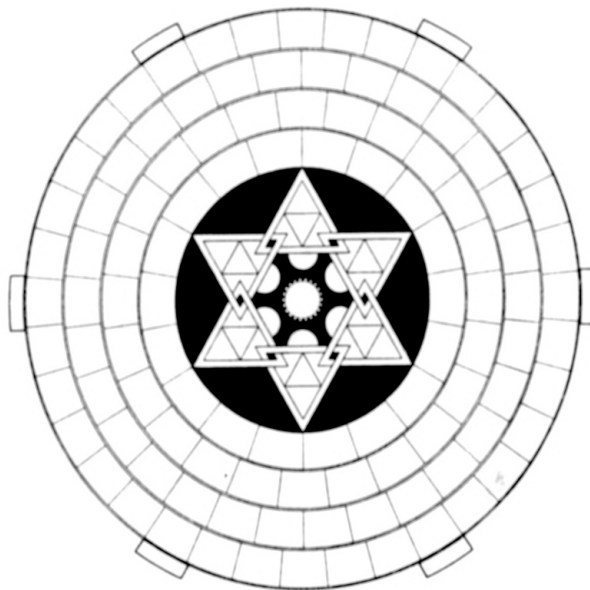


Fig. 8.26: The Vedic cosmograph below the dome.

Indian society, it also connects the present culture to the roots of the society in the religious and mythic sense. Aspirations, culture in transformation, the past, the sacred, myths—all these are demonstrated by the diagram.

In addition to the elements discussed above, a couple of other aspects need to be mentioned. The fabrication of the four fiber-glass statues and the production of the mural on the surface of the wall on the north of the eastern side facing the *kund* is credited to the *urban* traditional craftsmanship and artistry called in from the adjoining urban center of Mumbai (formerly Bombay). This move was at the behest of the scientists of the IUCAA. Although the content of the art and craft is not of the artists' invention, the fabrication is done using their expertise *and* technology—an aspect which, according to Correa, is invaluable toward the objective of regionalism in architecture. The four statues are created by Mr. V. V. Patkar who is best known as the sculptor of the giant idols of Lord Ganesha in the city of Mumbai. The Ganapathi festival, an occasion marking the reverence paid to the religious and mythic Lord Ganesha, is characterized by the act of ceremonial immersion of his idols in the Arabian sea off the coast of Mumbai. The city of Mumbai is famous all over the country due to the gigantic idols sculpted every year for this festival. Mr. V. V. Patkar, therefore, belongs to and, indeed, is a leader of the school of urban traditional craftsmanship in India. The direct relation to the local culture is established in the hiring of Mr. Patkar to fabricate the statues. Thus, the use of

urban traditional craftsmanship and technology available in the region at the time of the construction of IUCAA, for Correa, is very important.<sup>11</sup>



Fig. 8.27: The Ganesh Festival—note the size of the idol.

Similarly, the artist Mr. P. K. Bhiwandkar is famous for the giant cinema posters painted by him and reproduced in print. In almost every street these posters of the latest Hindi film will be pasted on walls or hoardings. The film industry in the city of Mumbai has been traditionally very active and the residents of the city of Mumbai are avid film fans. The huge crowds outside film theaters at all times amply demonstrates this

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<sup>11</sup> Correa, Charles. "Vistas" in Steele, James (ed.). *Architecture for Islamic Societies Today*. London: Academy Editions, 1994; and "Charles Correa" in *Architecture + Urbanism*. Tokyo: Architecture + Urbanism Publications Pvt. Ltd. Jan 1994.



popularity. Mr. P. K. Bhiwandkar was called to paint the mural depicting a cosmic phenomenon as identified through observation i.e. essentially an exploration of the “Age of Reason”. This is another instance of the use of an urban traditional artist in the “generation of spatial tensions” through the use of murals. The mural is not a mere painting on a black surface. It is a fabrication of curved tubes of the pattern to be painted. This pattern is located away from the plane of the background, giving it a three dimensional appearance. Although the mural is visible from the *kund*, its three dimensional quality is visible only from a relatively closer point of inspection.

The film following and the popularity of the Ganapathi festival are today’s cultural features of Mumbai which is the largest urban center of western India. The use of artists and craftsmen from this culture in the IUCAA is representative of the direct involvement of those who facilitate the expression of contemporary Mumbai culture.

There is no doubt, therefore, that according to Correa’s definition of culture, the IUCAA is strongly regional from the “cultural patterns” point of view. The decision to build the building, by itself, displays the aspirations of the Indian society—to continue its ancient tradition of Space exploration and to join this exploration in the contemporary culture of the “Age of Reason”. It also connects to Correa’s components of the “deep level”, i.e. the levels of religion, of ancient and contemporary culture, and of the current aspirations and myths in a society. Such a connection displays the deep and subconscious level of continuation in a society’s evolution, attempted through

architecture. Additionally, the natural and the primordial components and the relevant imagery used to demonstrate some of the above components makes this building a reflection of the characteristics of the regional culture in which the IUCAA is grounded.

As regards *Critical Regionalism*, we see that the IUCAA connects to the “world culture” just as Frampton thinks a regional building should do. The incorporation of the statues of the three scientists who belong to the universal “Age of Reason”, and the iconographic use of the Serpensi’s Gasket and the Roche Lobes in the other two large courtyards in the IUCAA, also connect the IUCAA to the “world culture” of today. Thus, the IUCAA fulfils another condition required for it to qualify as a “Critical Regionalist” building.

Frampton also thinks that the establishment of a “domain” maintains the capacity of a building or region to resist universal, homogenizing forces. He explains that architectural character cannot be separated from the process of making. The main intention is to achieve an architectural identity through the character developed as a consequence of the mode of production. The approach of the regional architect should be antithetical to the typological design imposed by standardized industrial technology. For a place-based character to grow while resisting external influences, it is necessary to establish a “domain” within which it can be nursed. A “domain” (location) has to be defined within a boundary. It could be a physical boundary or symbolic, or both. Frampton gives basic examples like the perimeter block, or an internal space like the atrium, and so on. Such a domain will help in the production of meaning and the creation

of place. The link, according to Frampton, between production and place will result in a certain “character” which will then give the society a sense of identity.

In addition to the above, each site, according to Frampton, should be dealt with in relation to its specifics.<sup>12</sup> User participation must be encouraged. There must be an effort at re-establishing the dialectic between building and the public realm, of built organism and the spaces it necessarily creates around itself. Besides, Frampton subscribes to Van Eyck’s argument that to achieve “temporal depth”, or “associative perspective”, it is necessary to establish a continuum between the past, present and future.<sup>13</sup>

We see that the IUCAA fulfills all these conditions. Its mode of production is not that of solely using standardized industrial products. The design is site *and* region specific and not typological design dictated by industrial production. It will therefore, according to Frampton’s criteria, exhibit a local “character” due to its mode of production, as well as due to the fact that the mode of production grows out of its relation to the region and site. This “character” is within a “domain”. The “domain” is the enclosure of the IUCAA complex, especially the stone clad walls within which the IUCAA lies.

There is also evidence of user participation in the design of the IUCAA. Besides consulting the users for ideas regarding the expression of the theories of Space

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<sup>12</sup> Frampton, Kenneth. “Place, Production and Architecture: Towards a Critical Theory of Building” in Frampton, Kenneth. *Modern Architecture and the Critical Present*. London: Architectural Design, 1982.

<sup>13</sup> Ibid.

exploration, Correa has also mentioned the fact that the modules of the hostel blocks do not follow traditional Indian or American systems. At the request of the Head of the Institute, Dr. Jayant Narlikar, the hostel was designed as per the University of Cambridge module. This is because many of the faculty are said to have conducted research in that university.

In addition, it is evident from the description above and the images, that there is an interaction between the outdoors and the indoors. Frampton finds that such an interaction is missing in the buildings created by the industrial “mode of production” due to the extensive use of air conditioners which necessitates the segregation of the indoors from the outdoors. Such an interaction is, therefore, one of the conditions of *Critical Regionalism*. The IUCAA displays such an interaction.

Finally, Frampton thinks that there should be a continuum established between the past, present and the future. As seen above, such a continuity exists in a number of instances, like the four statues which convey the development of the study of Space, seen in conjunction with the IUCAA itself which is a symbol of the study of Outer Space in the future. Thus, it can be seen that the IUCAA fulfills several criteria of the theory of *Critical Regionalism*.

Amos Rapoport, in his book *House Form and Culture*,<sup>14</sup> examines the relationship of climate and house form in primitive and pre-industrial cultures. The components of climate which he has used are also valid in this exercise. These components are: temperature, humidity, wind, rain, radiation and light. According to Rapoport, temperature, humidity and wind can be considered as one since they are interrelated. Also, Rapoport's study of shelter due to rain does not apply to this study since Rapoport has analyzed buildings of the pre-industrial past and before. These vernacular buildings use traditional materials and forms suited to those materials. The IUCAA is a building made out of modern materials and its form, therefore, is not dictated by the materials. Rapoport has put forth certain observations with regard to how each of these components have been dealt with in a time tested manner by the traditional societies he has studied. Some of his observations are applicable to this study.

Climate is a primary consideration in Correa's architecture. In fact, according to Ozkan, Correa "has put his endeavour into a nutshell by entitling his approach: 'Form follows Climate', where he gives priority to the macro environment which determines many aspects of the built form."<sup>15</sup> In fact, Correa has been

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<sup>14</sup> Rapoport, Amos. *House Form and Culture*. Englewood Cliffs, N. J.: Prentice-Hall, Inc. 1969.

<sup>15</sup> Ozkan, Suha. *Introduction: Regionalism Within Modernism*, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985, p. 14.

preoccupied by the open-to-sky spaces which he thinks do not just fulfil pragmatic advantages of space requirements, but are also a resource in a warm climate. Such open spaces also provide metaphysical and sacred advantages. This open-to-sky space is so central to his architecture that, as mentioned earlier, three of his exhibitions around the world were related to such spaces.

*"So for all of us here in India, the word aakash conveys much more than sky. . . . these spaces, open to the sky, condition our perceptions very powerfully, bringing a sense of the ineffable into our lives. While the symbol of education in North America has been the little red school house, in India—as in most of Asia—it has always been the guru sitting under a tree. . . . this image of the Lord Buddha sitting under the peepul tree. . . . is also far more evocative, more conducive to enlightenment."*<sup>16</sup>

This researcher's experience of the weather in Pune is that the climate is hot almost throughout the year. Rain is limited to the four months of June to September, and is moderate in intensity. The temperatures in the month of May tend to cross 35° C (95° F) but never do they reach 40° C (104° F). The minimum temperatures in the months of December and January never go below 10° C (50° F). The humidity is not extreme, although it does tend to be high, especially from the month of June to the month of October. According to the information obtained from the Meteorological Society of India, the climate can be termed hot and dry for most of the year, although spells of high humidity are prevalent during the months of monsoon.

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<sup>16</sup> Correa, Charles. "The Public, The Private and The Sacred" in Grover, Razia (ed.). *Architecture + Design*. New Delhi: Media Transasia (I) Pvt. Ltd., Sep-Oct 1991, p.92.

As regards the IUCAA, the basic form and layout conveys at first glance that the building is designed in accordance with the climate. It is not a “glass tower in the middle of a desert”. It is a ground and upper story building for the most part, built around several courtyards. In the plan, one will notice that there is a hierarchy of courtyards throughout the academic building. Some courts are public, others are used as light and ventilation shafts around which are arranged certain spaces. The building appears to be designed in consideration with the macro environment as are most of Correa’s buildings, according to Ozkan.<sup>17</sup>

The overall form for hot climates, Rapoport observes, has traditionally been the arrangement around a courtyard. Wind, temperature and humidity, being interrelated, they will be examined together. The IUCAA has been designed in such a fashion. The *kund* in the IUCAA is not a completely enclosed form. As seen in the plan, it has openings on the southeast, the south, the southwest, a large opening on the west under the sky dome and on either side of it, and one on the northeastern side opening onto the computer court. These openings facilitate wind movement in all directions. The predominant wind direction on the western coast of India is from the south and the southwest. But wind movements from other directions are not uncommon. Thus, the design of the central *kund* is such that it allows for a healthy flow of air from all directions. Some of these winds are channeled into the other courts also, like the opening between the *kund* and the computer court, and that between the *kund* and the Serpenski’s

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<sup>17</sup> Ozkan, Suha. *Introduction: Regionalism Within Modernism*, in Powell, Robert (ed.). *Regionalism in Architecture*--Proceedings of the Second Regional Seminar in the series Exploring Architecture in Islamic Cultures convened by The Aga Khan Award for Architecture held between December 17 and 22, 1985, at Dhaka, Bangladesh, Singapore: Concept Media, 1985.

court (see fig. 8.28). Also, the *kund* is a sunken courtyard, creating more of a negative space in the *kund* and aiding therefore, the Venturi effect attempted.

The Serpensi's court also receives wind from the openings in its northwestern corner and the southeastern corner. The flow of wind from the south is captured by the opening in the southeastern corner of the Serpensi's court and channeled through the northwestern and the northeastern corners. Similarly, the openings to the south and southeastern portion of the *kund* capture winds and channel them into the *kund*. The outlets in the *kund* are numerous. The winds will be captured due to the "Venturi effect" created by the narrow openings and the broad open space beyond these openings,

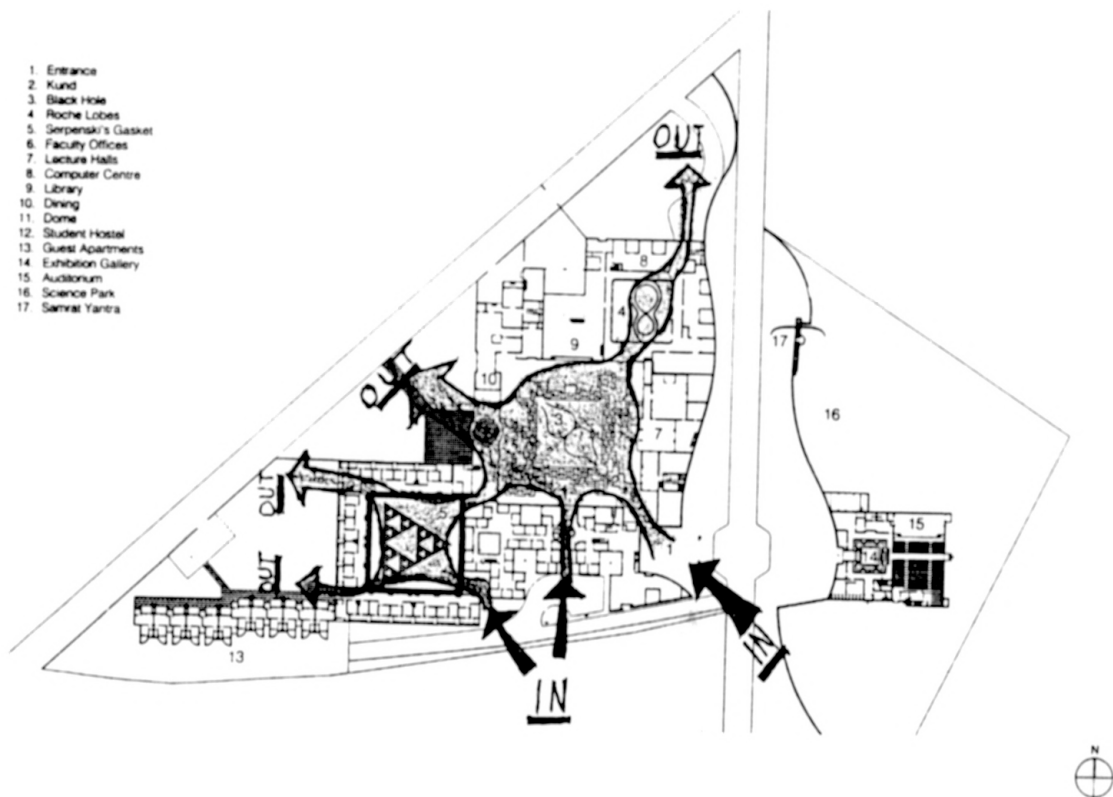


Fig. 8.28: Wind circulation within the built form.



thus accelerating the speed of the winds. The computer court relies on the *kund* for its share of winds, but it also captures winds coming from the north. The visiting faculty residences, being linearly arranged receive ample winds for cross ventilation from the north and the south without obstruction. Thus the overall arrangement shows that wind circulation is abundant throughout the academic block.

The circulation corridors for people being in the form of the “ritualistic pathway” again provide ample variation of shade, light and winds through the openings in the courtyard enclosures. According to Rapoport, as regards high humidity, not much can be done in a hot climate except by mechanical means besides blocking direct sun. Perhaps the only thing that can be done is to allow for humid winds to move over the skin in an effort to provide a cooling sensation. Correa has done precisely that. The smaller internal courtyards allow breeze in a less turbulent measure. While passing through the openings between the three large courtyards, or through the openings which allow for wind into the larger courtyards, the breeze is stronger. These winds also permeate the internal corridors which pass through the openings provided to channel breeze through. Thus all spaces along the corridors whose doors are not shut, receive ample wind flow. The shapes of the openings which receive winds are also designed to capture the maximum amount of wind and channel it through. This can be seen in the opening on the south of the *kund*, as also on the southeastern corner of the *kund*.

Another important feature is the design of the building in relation to the sun. In a hot climate, the provision of shade is important. The path of the sun, for the most part of the year except winter, is directly overhead from the east to the west and not

via the south. This is because of the proximity of the region to the equator. The sun's rays are extremely hot during most of the year and need to be avoided. The plan of the academic area shows that, except for the cafeteria, no rooms open onto the east and the

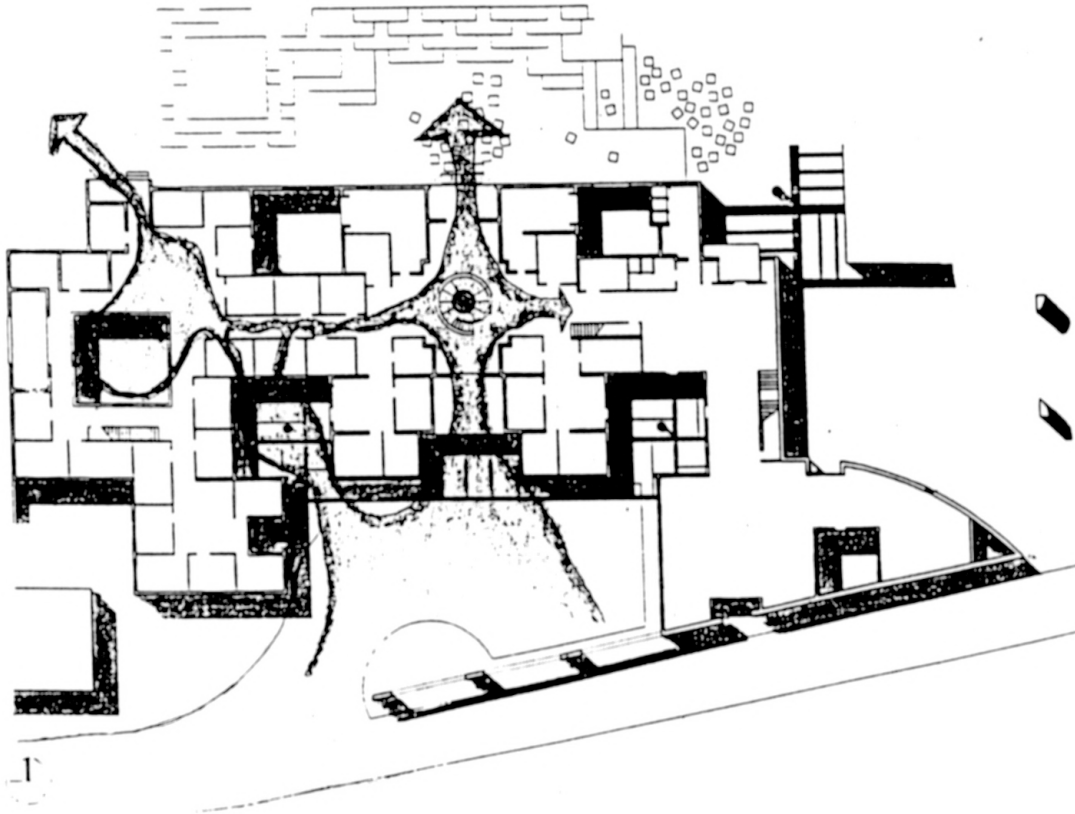


Fig. 8.29: Winds captured by the openings flow through the corridors.

west. The eastern face is a dead wall all along, while the western face consists of either corridors and circulation spaces, or toilet and service areas as in the hostel block. This applies for the north-south peripheral components of each courtyard. There are no glass panels or windows which receive direct sunlight from the east and the west anywhere in the building. Thus, such a design prevents heat build up. The corridors, circulation spaces

and the service blocks serve as buffers between the living areas and the direction of the strong sunlight.

At the level of the micro climate in the courtyards, arcaded corridors which are on the periphery of each courtyard provide shade which serves to lower the temperatures within the courtyard. So also, when the sun is to the east or to the west, the shadow of the north-south elements which define each courtyard contributes towards lowering the temperatures which may have built up during the noontime when the sun was directly overhead. Added to this, the vegetation in each courtyard further contributes in lowering the ambient temperature. The smaller courtyards, being almost completely enclosed except for the openings which allow winds, remain much cooler throughout the day as the sun has little opportunity to penetrate the enclosure, except at noon. Aided with this, the vegetation in the courts, and the openings that serve to allow winds through, also help maintain a lower temperature.

As regards light, the ample number of openings in each area, combined with the provision of the smaller courtyards which enable diffused light through while preventing direct sunlight, ensure that each area is adequately illumined. As mentioned earlier, there are no windows visible which open directly onto the east or the west. Thus direct sunlight, and the glare and heat associated with it, are eliminated. It was indeed remarkable that when this researcher visited the building, there was no need of artificial lighting or air conditioning during any time of the day. Perhaps the only areas which were relatively dark were the two corridors which connect to the Foucault's Pendulum from

the east and the west. There are rooms on either side of these corridors and large amounts of light do not reach the corridors. This is not to say that one gropes in the dark. The light level is adequate to read the names and numbers outside each room, and perhaps even a book with some difficulty (see fig. 8.12). No other area that this researcher visited required artificial light. This applies even to the administration office block which is of wide dimensions.

We have so far discussed temperature with relation to winds, humidity and sunlight, and the provision of adequate natural light inside the building. Of the components identified by Rapoport, only rain remains to be discussed. As regards rain, it adds to the humidity in an area which already has a more than moderate level of humidity. As Rapoport observes, the only thing that can be done in such a situation is to design effectively for wind circulation in the absence of mechanical means. As discussed earlier, the building already incorporates an effective design for the circulation of winds.

But the heavy rainfall in Pune between the months of June to September could be thought to necessitate the use of sloped roofs, but the IUCAA does not display this feature. The discussion on roofs in Rapoport's book revolves around the selection of materials in vernacular architecture. Such decisions may be based not just upon efficiency of materials in the particular climate, but primarily upon various other factors which can be broadly placed in the domain of socio-cultural realities in a society. Once the materials have been selected, the form is modified by several factors such as gravity,

weathering, portability and prefabrication (in nomadic tribes), and lateral forces. The climatic influences on roof form are not discussed by Rapoport.

The use of steel reinforced cement concrete seems to be a socio-cultural manifestation in the case of the IUCAA. It belongs to the domain of “modern” technology. The IUCAA, as has been discussed earlier, is meant to display the “modernity” of India which is a cultural manifestation. Correa’s intention is to use contemporary technology along with ancient Indian concepts and patterns of spatial organization to demonstrate the transformation of the past to realities in India today. The invention of steel reinforced cement concrete as a “modern” material made it possible to effectively counter climate in a manner which is not traditional.<sup>18</sup> Traditionally, the sloped roof took its form to drain off rain. Water collection on a roof can be very heavy in terms of weight. Traditional materials used in “folk” architecture (a term used by Rapoport to identify that architecture which is not architect-designed and monumental in character) may not be able to withstand the weight of standing water and may either cave in or develop cracks leading to water seepage. Reinforced cement concrete has the strength to withstand the weight of water and prevent the development of cracks in the ceiling. The flat roof form also conforms to the “modern” aesthetic of architecture, further adding to the “contemporary” expression of the IUCAA. Thus, from this point of view, the flat roof seems to be more of a cultural expression, than a climatological manifestation in the IUCAA.

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<sup>18</sup> From this point of view, it helped break links with the past, as traditional building methods and solutions no longer seemed valid due to the flexibility and strength of the material of reinforced cement concrete. The discontinuity with the past is a pronounced feature of architectural modernism. This feature adds to the “modern”-ness of the IUCAA.

But on the whole, it appears that the academic building of the IUCAA may have a high level of performance as regards climatological design. The byproduct of this is that a large amount of energy is being saved. The IUCAA therefore, fulfils the axiom of “climate design” in the *Revised Taxonomy*. It also fulfils this criterion of climate design for the theory of *Critical Regionalism*.

### *Iconography*

The Oxford English Dictionary defines “iconography” as the “illustration of a subject by drawing or figures”.<sup>19</sup> The Bagsvaerd Church at Copenhagen by Jorn Utzon is cited as an example of the use of “iconography” in a modern critical regionalist

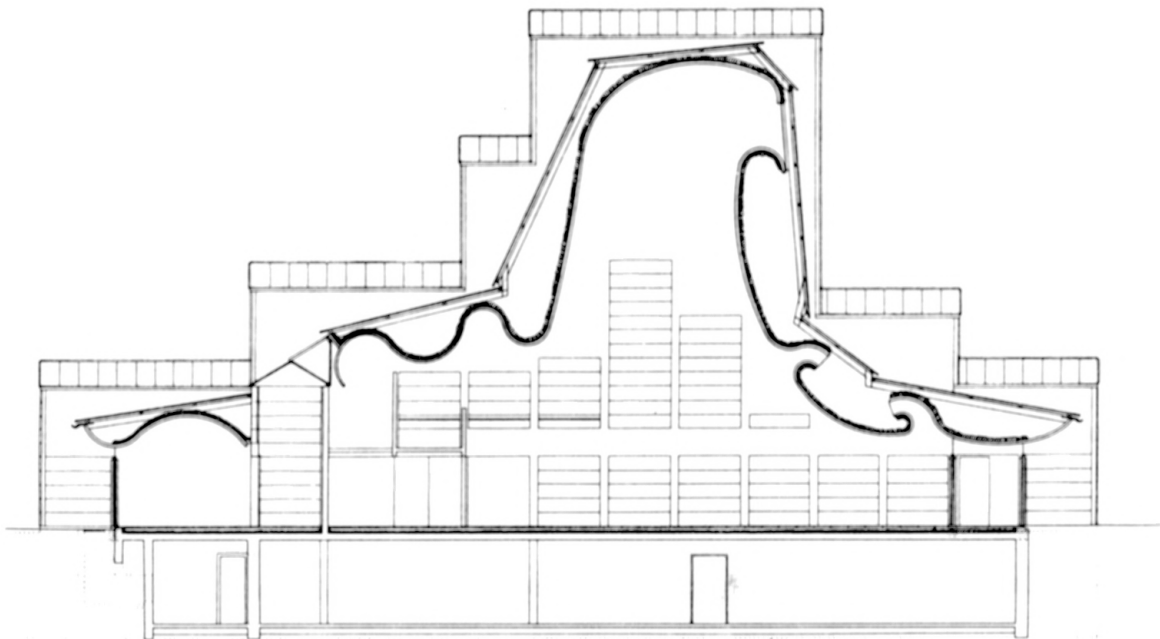


Fig.8.30: Jorn Utzon's Bagsvaerd Church, Denmark.

<sup>19</sup> Thompson, Della(ed.). *The Pocket Oxford Dictionary*, Eighth Edition (Indian Edition), Delhi: The Oxford University Press, 1992.p.435.

building. In this Church, according to Frampton, Utzon has used the flowing forms of an Oriental Pagoda on the ceiling. Hence, while being a local contemporary building in Denmark, it also connects to the “world culture” through this ceiling. This ceiling is, therefore, an “illustration” of the “subject” of world culture, according to Frampton. The IUCAA, it appears, has numerous such “illustrations” in the academic block. The “illustrations”, it appears, are isolated instances of “iconography” and are not related to one another. The following is a list of such “illustrations” and their significance.

1) According to Correa, the visual structure of Outer Space is “black on black on black”. Correa has tried to demonstrate this visual structure on the eastern and western walls of the academic block and the Science park respectively by cladding these walls in three types of black stone having different shades due to their inherent characteristics. The walls emerge out of the ground in the form of the local black basalt stone in its rough chiseled finish. At a certain height, which varies along the length of the walls, the material changes to the smooth unpolished locally available Kaddapah stone of a different shade of black. This Kaddapah stone is topped with a glossy polished black granite. The black granite reflects the sky and the passing clouds establishing the connection with the sky of Outer Space. This “black on black on black” structure, therefore, is the “illustration” of the “subject” of “the visual structure of Outer Space, and hence it is “iconographic” in nature.

2) The basalt masonry and its course patterns and proportions are reminiscent of the old forts in western Maharashtra built during the reign of the Marathas between the 16<sup>th</sup> and 18<sup>th</sup> centuries. The abundantly available black basalt in the western region of India is strong and was used in the construction of even palaces in the city of Pune. Thus, even

the structure of the masonry is representative of the region and its history, further rooting the building in history. The use of the black basalt stone and its masonry structure, therefore, “illustrates” the “subject” of the historical roots of the region in which the IUCAA is built.

3) The four statues demonstrate several aspects of the strong “iconographic” images. They emphasize the nature and function of the building as a facility related to astronomy and astrophysics. Secondly, the four statues representing scientists over the centuries demonstrate the continuity in the exploration of Space phenomenon since ancient times. The statues also demonstrate the global nature of this investigation of the Outer Space since the scientists represented are from across the world. The statue of the sage Aryabhata represents the efforts of Indian scientists in this study of Outer Space in the ancient times, and together with the contemporary IUCAA building, it represents the continuity of such a study by Indian scientists even today. The statue of Aryabhata also conveys the regional nature of this building since all the other scientists belong to the “Age of Reason”, while Aryabhata is the lone representative of the Vedic times, which is the past of India. The statue of Aryabhata, thereby displays the location of the building on the planet Earth. The four statues, thus, perform a number of functions related to “iconography”.

4) The “sky dome” is another “iconographic” element. It demonstrates the “subject” of the time and location of the laying of the foundation<sup>\*</sup> stone. As has been mentioned earlier, the scientists at IUCAA, using radio telescopes, mapped the exact position and size of the stars with relation to each other for the specific time of 8:30 p.m. on December 29, 1988, as viewed from Pune. This was the time at which the foundation stone for the



IUCAA was laid. The “sky dome” is also the literal representation of the night sky for a lay person visiting the IUCAA, establishing thus, like the four statues, that the building the person is in is related to Outer Space. Perhaps, it also represents the exploration of Outer Space in the “Age of Reason”, especially when it is viewed in conjunction with the cosmographic pattern below. This Ayurvedic cosmograph is a graphic representation of seasons in India in relation to the position of the constellations. By itself, the cosmograph represents the ancient nature of Space investigation in India. When viewed together with the “sky dome”, it displays the differing nature of investigations during the two eras. The “sky dome” belonging to the “Age of Reason” is based upon actual observation through telescopes, while the cosmograph represents the abstract nature of investigations in ancient India (seen in the attempt to connect the cycles of the seasons to the position and movement of the stars). The “sky dome” also demonstrates the nature of graphical representation in the “Age of Reason”, which is a replication of what is seen, whereas in ancient India, the graphical representation was abstract, philosophical and geometrical. The two icons together establish the continuity of Space exploration in India from the past to the present, and also into the future, since, it is in a research institute that the two patterns are recreated. Again, the fact that an ancient *Indian* pattern is used in conjunction with the representation of the sky as is done in the universal “Age of Reason”, demonstrates the national and regional nature of the IUCAA.

5) The *kund*, as Correa has mentioned, is a representation of the idea of a Black Hole. Perhaps the relation is intended to be due to the darkness, depth and the feeling of mystery associated with the still water in a *kund* and with a Black Hole in Outer Space. Hence, instead of water in the *kund*, as has been the case traditionally, a representation of

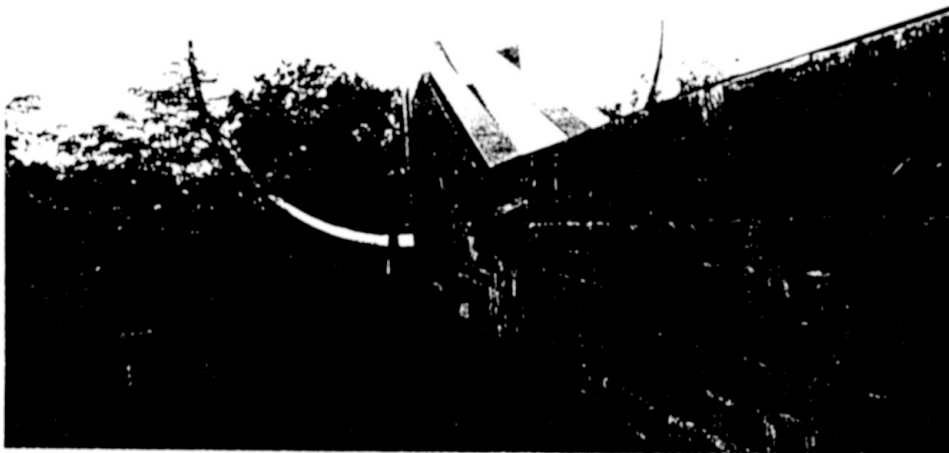
the depth, darkness and mystery in the form of a Black Hole is attempted by using grass of dark colours which contrasts with the light coloured stone blocks. Water in the *kund* is signified by the ancient stepped well patterns in Gujarat, a state in western India, to the north of Pune. Thus, a person relatively familiar with architectural and religious history of western India will be able to recognize, after seeing the stepped pattern, that water is symbolized by the enclosure. Thus, the *kund* is an “illustration” of the “subject” of a Black Hole. It appears that the reason why Correa has intended to use the concept of *kund*, rather than, say the sea or a pond, is to point toward the region in which the IUCAA is located.

6) Similarly, the other two courtyards also contain such icons. The Serpenski’s Gasket is supposed to be a reproduction in the landscape of the triangles related to a certain “fractal theory” of Space exploration. This reproduction is intended to connect the students’ hostel with an icon representing Space exploration. The computer court contains a similar reproduction. Two pre-existing trees enabled the idea of the “Roche Lobes” to materialize. The “Roche Lobes” is a phenomenon which is said to appear when two stars orbit around one another due to the gravitational pull of the other. If a star expands sufficiently to reach a particular point between the two stars, then an energy transfer takes place, resulting in the production of X-rays. The intention behind such a reproduction is similar to that of the Serpenski’s triangles—to relate the computer court to a celestial phenomenon. Both of these icons, therefore, connect the institute metaphorically to the subject of Space exploration.

7) The western wall of the Science park culminates, to the north, in a reproduction of the Samrat Yantra, an ancient Indian Equatorial Sun Dial. Although this study is limited to



Fig. 8.31 & Fig. 8.32: The *Samrat Yantra*, the Equatorial Sun Dial. A replica of the 17<sup>th</sup> century model.



the academic block, the Samrat Yantra is a dominant visual connection to the academic block. Therefore, it cannot be ignored as it establishes its connection to the academic block as one enters the complex. The instrument, popularly known as “Jantar Mantar”, was built in five different places in northern India by a king named Sawai Jai Singh in the 18<sup>th</sup> century. The five places are Delhi, Jaipur, Mathura, Ujjain and Varanasi. The model was designed after the king studied the similar observatories in Margha, Iran and Samarkhand, Uzbekistan before evolving his own design. It is another icon which establishes the connection of today’s Space research with its Indian history.

Thus, we see that the IUCAA has numerous such instances of the use of “iconography”. Some connect with the past of Space exploration in India as well as with today’s global Space research, while other connect only with the exploration of Space in this “Age of Reason”. But it is observed in the above instances that many of the icons are also used to establish a sense of regionalism in the building. Others are used for purposes of educating visitors and children, for whom regular educational programs are organized within the complex.

### ***Contextuality***

Frampton is concerned with two aspects of “contextuality”—topological contextuality and contextuality within the surrounding environment. As regards topological contextuality, Frampton says that *Critical Regionalism* is “Topological” rather than “Typological”. The word typology refers to a common form created

regardless of the specifics of the site. In the West at present, this is usually due to the standardized industrial production of building components which necessitates the leveling of a site. According to Frampton, such a practice should be discouraged and a site-specific architecture should be attempted through the use of materials which are not standardized industrial productions.

The IUCAA can be called typological in a sense, because its courtyard configuration is a typology typical of a warm climate. But this is not what Frampton is against. Frampton advocates climatological design. As mentioned above, for Frampton, the typology should not be dictated by the logic of standardized industrial production, and the IUCAA is not such a typology. It does not use any standardized materials of the type of which Frampton speaks. There are no standard wall panels, or pre-fabricated dome sections, not even steel stanchions or beams which are industrially manufactured and hence limiting in length. The walls are in-situ reinforced cement concrete framed constructions with brick in-fill and clad with stone of various types in some portions. On other portions of the building, the walls are plastered with lime and finished with paint. The dome is also an in-situ construction built with customized form work. The pergolas are also not industrially produced. According to the information gathered by this researcher in the office of the architect, bamboo shoots were smoothed out and embedded within the concrete. Perhaps the only limitation which the architect encountered was with relation to the standard sizes of the sliding glass panels used, among other places, between the reception area and the courtyard adjoining it. Correa's building is, therefore, a custom design using small scale manufactured elements.

The IUCAA also suits the specifics of the site. The topography in the campus of the University of Poona is not contoured. It is, by and large, a flat site. But the site specifics which are referred to above, relate to the existing features on the site of the IUCAA before its construction. These specifics are the two existing roads which cut through the area demarcated for the IUCAA. As seen in the plan, the building is designed around these specific features. It is broken into three parts and these parts are placed without obstructing the roads.

As regards the contextual response to the existing environment, there is no humanly built environment visible in the near vicinity of the IUCAA. The campus of the University of Poona is spread out and IUCAA is located deep inside the campus. Thus, there is no built environment to relate to in the immediate vicinity. As regards a unified architectural language within the campus, the campus is very old and there is no tradition of standard architectural features. Thus, the IUCAA is not related architecturally to other buildings on the campus, except for the fact that almost all the buildings are no more than a few stories high. The IUCAA also does not go beyond the ground story and a single upper story. This aspect is important since contextuality within the built environment is a concern for Correa as seen in many of his publications. A “glass tower in the middle of the desert” makes no sense for him.

The issue of contextuality with relation to the natural environment can also be identified as a concern in the IUCAA building. Two instances demonstrate this concern. One instance is with relation to the two pre-existing trees which are now in the

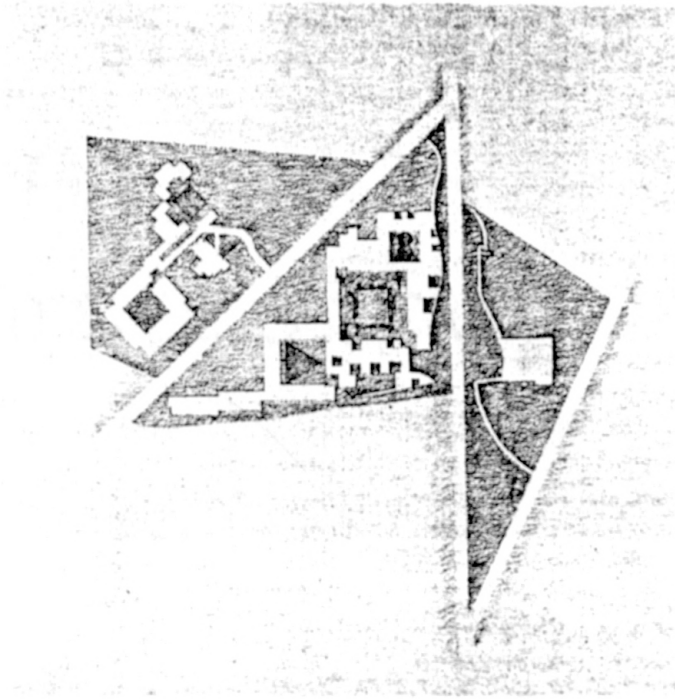


Fig. 8.33: Contextuality: IUCAA is site-specific.

computer court forming the “Roche Lobes”. As is evident, the building was designed around these two trees, and these trees are used to demonstrate to the visitors a concept of Space Theory. The decision to build around these existing trees clearly demonstrates a sympathy for the natural environment. Secondly, in the western wall of the Science park, towards the south, is an unusual sight. As a visitor approaches, s/he sees a branch of a tree growing out of a wall! On closer observation, one notices that there is a tree behind the wall whose branch has been accommodated during the construction of the wall. The wall has been constructed around the branch, allowing it to grow unhindered. This instance, again demonstrates the respect Correa has for the natural environment.



Fig. 8.34: Contextuality: Wall built around the branch of a pre-existing tree.

Finally, on a more general scale, one notices that the flowing form of the eastern wall of the academic block and the western wall of the Science park, along with their dark colours do not violate the ambience of the surrounding natural environment, which may be considered rich to an extent. Also, the overall form of the building and the colours used in other parts of the complex, announce the presence of a building, but do not visually militate against the continuity and the flow of the surrounding foliage. Surely, the respect for the natural environment is adequately demonstrated in the IUCAA.

### *Architectonics*

Frampton is opposed to representational architectonics. The fact that a steel stanchion is hidden in the envelope of a building by means of a curtain wall does not appeal to him, as, in his opinion, it gravitates toward a “media dominated” architecture,



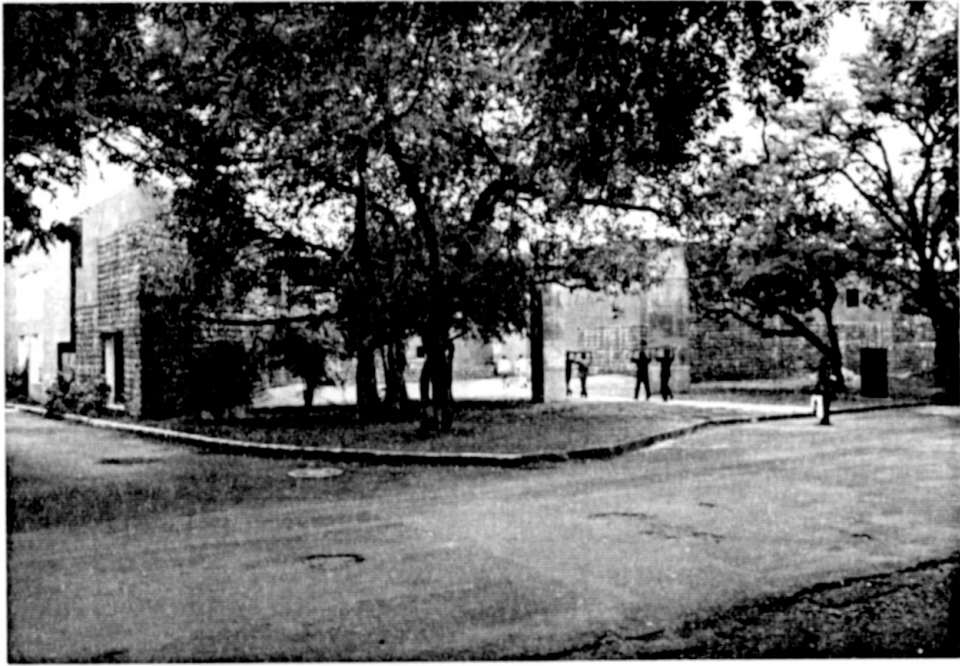


Fig. 8.35: IUCAA does not visually violate its physical context.

a phenomenon which *Critical Regionalism* aims to subdue. In trying to reach this objective, he appeals for visual truth in architecture. But reinforced concrete, according to Frampton, has no inherent expressivity.<sup>20</sup> Therefore, tectonics in reinforced concrete will be expressed with relation to its structural function, i.e. the transfer of forces. The example given by Frampton is of the supports under a bridge. The supports narrow down at the center which is the point of least bending, thus expressing the “ontological” tectonics in the column.

The tectonics in the IUCAA are almost entirely hidden, with no effort made to design them “ontologically”. The true structure is hidden by stone, or plaster and paint and at no point is it exposed throughout the building. The stone cladding is

completely representational of an idea other than tectonics, and carries only its own weight, without supporting the building structure. But Frampton also says that the form and representation can be true to what is seen in terms of climate and light also, besides

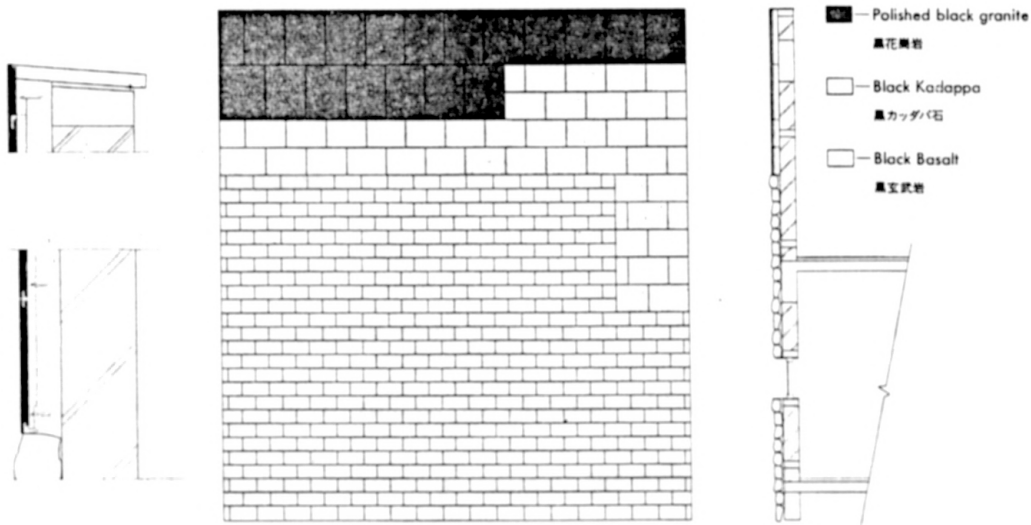


Fig. 8.36: Representational tectonics—cladded walls.

structure. We have seen in the last few pages that the IUCAA uses the courtyard pattern and the openings for wind flow, light and so on. The fact that during the day, there is no need for artificial light and ventilation, demonstrates the high performance standards in terms of energy savings. Such a design can be achieved only if the tectonics of a building are true to what is required for a climatologically efficient building. As against such a building, Frampton seems to oppose design which uses artificial ventilation and lighting, not requiring, therefore, a true architectonic in terms of light and climate.

<sup>20</sup> Mentioned in a lecture titled "The Scope of the Tectonic" delivered as part of the "Ekdaahl Memorial Lecture Series" at Kansas State University on February 11, 1998.

Also, if this notion of architectonics is applied to the landscape elements, it appears that a truthful tectonic is displayed. The stepped pattern of the *kund*, the brick and stone used to define the patterns in the Serpenski court and the computer court, represent their own inherent tectonics. Thus, it appears that the IUCAA partly fulfils Frampton's criteria of ontological tectonics, but not completely.

### ***Multi-Sensorial Perception***

We have clearly seen that the IUCAA fulfils the criterion of "multi-sensorial perception" as it relates to climate. "Multi-sensorial perception" in the framework of the *Revised Taxonomy* includes the experiential aspects of a building as against making it photogenic; the attempt to use natural light and the seasonal and daily variations associated with it; and, the necessity to relate the visual to the tactile. The proposal to make a building experiential as against photogenic can be interpreted as being true to the feeling associated with volume, its shape and configurations, and so on. Architecture in the West, according to Frampton, has lost its experiential qualities in the effort to make a building picturesque. This lamentation alludes to the attempt to display, say a façade, which is not true to what it conveys. There may be variations in the colour on a facade to depict a niche or a recess in the building mass, but the mass physically does not change. Such a representation may look good visually, but the truth associated with it is non-existent. Similarly, there may be a representational image of a dome in an enclosed volume, but the actual structure of the representation may be flat. Thus,

Frampton argues for truth rather than representation that disguises (rather than reveals) truth.

As regards the variations of light, Frampton argues for the use of natural light with its subtle daily and seasonal variations associated with the place in which the building is located. This aspect may be understood better if one imagines an opposite and extreme example. If a building using artificial light is built on, say a latitude which is close to the polar regions, the actual duration of the days and nights is specific to that region and the variations of light at different times of the day, or during the various seasons, will, therefore, not be found on any other location on the earth except at that latitude. The use of artificial light will not make a person aware of the time of the day and it may also result in a certain placeless feeling. Thus, for Frampton, it is necessary to use the natural light available in the region in which the building is built. The use of artificial light is to be minimized.

As regards the correspondence between the visual and tactile, the examples Frampton gives are the sensations of heat and cold associated with certain materials, the texture, the aroma associate with a material, the sound of our own footfall, and so on. As against these tactile sensations, one could use, say laminates, which are representative of a material that displays the texture of a “warm” coloured (yellow sandstone, for instance) rough stone. But on touching, the laminate does not possess the rough texture which it visually conveys. Thus, for Frampton, it is important to use actual materials, the qualities of which one can associate with, in all its truth.

The IUCAA, as we have seen, engages no visual falsity in its appearance. The volumes and form are true to what is seen. There is no attempt to make the building purely photogenic, apart from this truthful experience. If a recess appears in a wall, the recess is actually present. A good example of such truth is the sky dome and the “stars” embedded in it. Natural light actually filters through. Correa could have painted the stars using bright florescent colours to achieve the same image. But the stars actually refract the light of the sun, making them “truthful”. So also, the dome which is painted black. Correa could have achieved the effect of the dome using representational three dimensional imagery. But the dome represents the truth of its shape and volume, as well as how it is seen from the earth.

We have also seen that the form of the IUCAA uses natural light and climate as its dominant determinants. As has been mentioned before, each room is placed around a courtyard and has openings for light and ventilation. The visit of this author to the complex showed that during the day, no artificial light was used (during daytime hours) in any of the spaces. Thus, the IUCAA achieves Frampton’s proposal for the maximum use of natural light.

As regards tactility, although I have argued that the tectonics used in IUCAA is representational, the cladding elements used are all natural materials. Thus, if the basalt stone displays a rough texture, it truly possesses a rough texture. Similarly, the other materials used in the IUCAA do not convey any falsity. The floor in the internal areas is made of marble mosaic tiles, or marble slabs. Under the pergola near the sky

dome, locally available gray *shahabad* stone is used. There is no attempt to represent the characteristics of the materials used. Thus, we see that the IUCAA also fulfils this axiom of “multi-sensorial perception” as defined in the theory of *Critical Regionalism*.

But for Frampton, a building may be called a “critical regionalist” design without it having to fulfil all the criteria that he specifies. The IUCAA, it appears, fulfils all other criteria required for it to be called “Abstract Regionalist” as well as “Critical Regionalist”. But as discussed earlier, the building is not a reaction to “universalizing forces”, but to “westernizing” forces which may eventually become universalizing in nature. The IUCAA is an attempt to express its time within its place by recalling its historical, cultural and material roots, while attempting to house and support practically one of the branches of study in the international “culture” of the “Age of Reason”. Therefore, the IUCAA can be said to be “Abstract regionalist” as well as “Critical Regionalist”, but with a “Historically Transformative” base as indicated within the *Revised Taxonomy of Regionalism*. In other words, the IUCAA is an example of a “transformative” practice of architecture, rather than a “critical” practice, yet it fulfils the criteria of *Critical Regionalism*. The *Revised Taxonomy* does not address the future, hence, it is irrelevant that the IUCAA also contributes towards the creation and expression of an architecture characteristic of a universalizing “Age of Reason”.

## CHAPTER IX

### RAJ REWAL

*"Our generation has been trying to discover the common thread in which the fabric of Indian architecture has been woven in the past and its significance for our times."*<sup>1</sup>

-Raj Rewal.

Raj Rewal is another Indian architect who is known to practice an architecture which strives for an "Indian" identity in the contemporary world situation. Although most of his projects are built in and around Delhi, his practice has not been limited to that region. He has to his credit several projects across India and in several parts of the world. Rewal is known to be innovative while striving for a continuation of the architecture of the past. He has always been recognized as one of the most respected figures in contemporary Indian architecture.

### A BRIEF LIFE SKETCH

Born in 1934 in Hoshiarpur, Punjab, India, Rewal lived and did undergraduate studies in architecture in Delhi. He left for London in 1955 for higher studies in architecture at the Architectural Association School of Architecture. He also studied at the Brixton School of Building, London. Following his formal education, he worked in several architectural firms in London while simultaneously working

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<sup>1</sup> From Curtis, William J. R. "Modern Architecture: Indian Roots: Raj Rewal" in *Architecture + Design: A Journal for the Indian Architect*, Jan-Feb.1995. New Delhi: Media Transasia (I) Pvt. Ltd., p.42.

independently as a theatre scenery designer. Subsequently he became an associate of the Royal Institute of British Architects, London.

In 1961 Rewal moved to Paris where he worked in the office of architect Michel Ecochard. In the following year, he returned to Delhi to begin his own practice. While practicing independently, he taught History of Architecture and Theory of Design at the Delhi School of Architecture (now, School of Planning and Architecture). In 1974, he opened a second office in Tehran, Iran, while designing a mass housing project there. Since the time he was a student, Rewal has been interested in the issue of a contemporary identity in Indian architecture. This interest in architectural research for a contemporary expression in Indian architecture continued and in 1985, he established the Architectural Research Cell in Delhi to aid his endeavour.

Rewal's projects have mainly included mass housing and institutional buildings. But he has done extensive work in the design of exhibition complexes, office buildings, and also universities and sports facilities. Outside India, Rewal has designed projects in Iran, France, Mexico, Portugal and several other countries.

Rewal's vast knowledge of traditional Indian architecture led him to an appointment as Curator of the exhibition "Traditional Architecture in India" for the Festival of India in Paris in 1986. He has also been featured extensively in exhibitions in cities across the world including Mumbai, Tokyo, New York and Paris.



Rewal has been called upon to lecture at various universities and schools of architecture in several countries besides India. These universities include the School of Planning and Architecture, New Delhi; Academy of Architecture, Bombay; the Royal Institute of British Architects, London; Munich University; Massachusetts institute of Technology; Columbia University; Yale School of Architecture; Cornell University, and several others.

Rewal's works have been featured extensively in many national and international journals and books. Two books have been written on him. Both are titled *Raj Rewal*, but are published separately.<sup>2</sup> Rewal has written numerous essays on the subjects of his interest, which have been published widely across the world.

In 1989, the Commonwealth Association of Architects, London, awarded him with the Robert Matthew Award in recognition of his innovative contribution towards the development of architecture in India. In the same year, he was awarded the Baburao Mhatre Gold Medal from the Indian Institute of Architects. The citation of the award commended him for "his consistent endeavour to evolve a rational synthesis of meeting the needs of contemporary society" and his contribution toward the "on going evolution of Indian architecture."<sup>3</sup> In 1993, he received the Mexican Association of Architects award, and prior to that he was awarded the Radhani Builders award in India in 1992.

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<sup>2</sup> *Raj Rewal: With Essays by William J. R. Curtis and D. Treiber* (monograph in French). Paris: Electa Moniteur, 1986; and Taylor, Brian Brace. *Raj Rewal: With an Essay by Romila Thapar*. London: Mimar Publications, Concept Media Ltd. 1992.

## IDEOLOGY

To understand Rewal's approach to architecture, it is necessary to get familiar with the influences which affected him during his formative years. William Curtis has appropriately captured Rewal's past in his essay "Modern Architecture: Indian Roots: Raj Rewal".<sup>4</sup> According to Curtis, Rewal's education and experience in Europe opened his eyes to examples from Japan and the United States, and gave him a new perspective on India. This gave him a firm practical base. His stint at Michel Ecochard's office, which had done work in Syria and Pakistan, exposed him to Ecochard's ethical base. Ecochard spoke of the role of architecture in the improvement and ennoblement of human conditions while basing forms on the "elegant resolution of structural and practical realities". Rewal's work in London as a theatre scenery designer, inspired him, according to Curtis, to use framed views, platforms and galleries in his architectural work later in life.

Rewal's job as a teacher of the History of Indian Architecture and Theory of Design at the School of Planning and Architecture, New Delhi, enabled him to do research into historical and modern buildings in India. He studied extensively the cities of Fatehpur Sikri, Jaisalmer and Ahmedabad. His research also included traditional towns in Rajasthan, Nepal, Iran and other parts of central Asia. But Rewal's study was not limited to traditional architecture. Simultaneously, he studied the imports of Louis Kahn and Le

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<sup>3</sup> Chauhan, Akhtar (ed.). *Journal of the Indian Institute of Architects*-Vol. 55, Issue 2, June 1990. Bombay: I. I. A. Publications, 1990, p. 6.

<sup>4</sup> Curtis, William J. R. "Modern Architecture: Indian Roots: Raj Rewal" in *Architecture + Design: A Journal for the Indian Architect*, Jan-Feb.1995. New Delhi: Media Transasia (I) Pvt. Ltd.

Corbusier in Ahmedabad and Chandigarh. This type of study enabled him to analyze the old and the new with an objective eye.

According to Curtis, Rewal admired the probity, sculptural power and timeless character of Le Corbusier's work, but was dismayed by its evident lack of attention to semi-enclosed open spaces like those found in the Indian past. Rewal also admired Le Corbusier's attempts at formulating a grammar of loggias, screens, verandahs, parasols and *brise-soliels* for the local Indian climate, but felt that not much was done to ensure a flow of cool air.

As regards Kahn's work, Rewal appreciated the forms and the idea of translating streets and squares into the modern context, but thought that it lacked the right degree of spatial ambiguity for Indian patterns of living. Rewal realized that both Corbusier and Kahn had turned to the past for lessons. But their strategies, Rewal thought, were not appropriate for direct emulation. The question in his mind, according to Curtis, was this: how best to formulate an architecture that would be right for the new and evolving conditions of Indian society?<sup>5</sup>

Rewal's study of historical Indian cities provided him with part of the answer. According to Curtis, Rewal identified the principle of architectural promenade in these historical sites. The promenades with their changing levels led through courts, pavilions, streets and other spaces protected from the sun. Geometrical discipline within

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<sup>5</sup> Curtis, William J. R. "Modern Architecture: Indian Roots: Raj Rewal" in *Architecture + Design: A Journal for the Indian Architect*, Jan-Feb.1995. New Delhi: Media Transasia (I) Pvt. Ltd., p. 43.

the urban variety was evident. The concept of *haveli*—a Rajasthani house of interlocking spaces with terraces, shaded overhangs and screened apertures—impressed Rewal. The themes, stratification, and shifting axes of Fatehpur Sikri also inspired him. Rewal, says Curtis, was trying to understand an urban morphology that treated streets, squares, courtyards, screens, galleries and terraces as a single system. Rewal would use this understanding in the numerous housing projects which he would subsequently design.

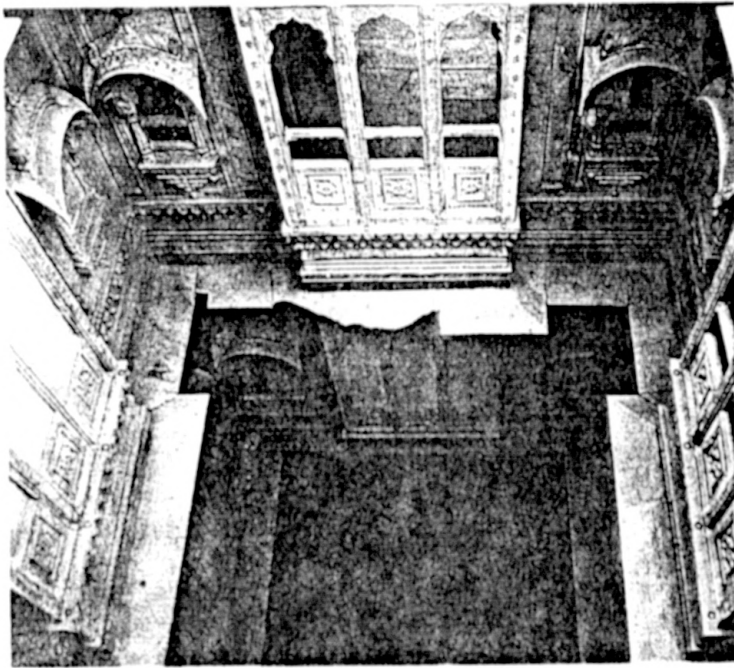


Fig. 9.1: A Rajasthani *Haveli* with shaded overhangs.

Simultaneously, Rewal, attempted through his projects to evolve a domestic vocabulary which included shaded apertures, rough brick walls, tall interior spaces to aid air circulation, inner landscapes of platforms and stairs and so on. Throughout, he applied the principles he had discovered in traditional Indian architecture while evolving a contemporary vocabulary. Rewal's efforts in this direction are

recognized by Curtis as attempting to penetrate local traditions at various levels and grasping certain spatial constants. But while doing this, Curtis says, Rewal rejects superficial imitation of the past and at the same time does not wish to be “colonized” by inappropriate models from the West.

True regionalism for Rewal, according to Curtis, is created by the extension and criticism of certain principles of modern architecture and their adaptation to pertinent lessons derived from the past. These lessons are at the level of *principles* and not the superficial transfer of stylistic elements. In this way, according to Curtis, tradition gets transformed by Rewal meaningfully into today’s context. By doing this, Curtis says, Rewal shows one possible way in his formulation of an architectural language that is based simultaneously on the abstraction of generating ideas from the past and an authentic response to contemporary social conditions. This approach, devoid of a dominant personal theory in his work, is labeled “empirical”<sup>6</sup> by Brian Brace Taylor, author of the book *Raj Rewal*.<sup>7</sup>

### **Determinants of Indian Architecture**<sup>8</sup>

The previous section elaborated upon the ideological position of Rewal. Rewal recognizes that Indian society is undergoing change rapidly today, but this present period of social change forms just one aspect of what Rewal thinks has been responsible

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<sup>6</sup> This “empirical” tendency of Rewal’s architecture has been examined more elaborately along with the idea of “rationalism” (with reaction to Correa’s architecture) in the concluding chapter of this thesis.

<sup>7</sup> Taylor, Brian Brace. *Raj Rewal: With an Essay by Romila Thapar*. London: Mimar Publications, Concept Media Ltd. 1992.

for the evolution of Indian architecture since ancient times. The other two factors are climate and technology. According to Rewal, these three forces of climate, social conditions and technology are now and have always been the three determinants of Indian architecture.<sup>9</sup>

Building technology changes very rapidly according to Rewal. Patterns of living and social conditions change very gradually and are constantly in the process of evolution. But the factor which remains constant is the climate.

***The Social Conditions:*** The social conditions of the Indian society today seem rather complicated as analyzed by Rewal. India is a tradition-bound society, and although all societies are fundamentally in a gradual state of evolution, the past is a living reality in Indian society according to Rewal. "Bullock carts and jet planes coexist together." But within this situation, Rewal has identified two sections of society, one which has changed substantially over the past few decades, and the other which has undergone changes of a smaller magnitude.

In the section of Indian society where lifestyles have not changed much due to external influences, the use of traditional materials, craftsmanship and so on, are very much alive today. But in the section of Indian society which has seen substantial changes, the use of contemporary high technology and materials is more evident. In such

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<sup>8</sup> Except where stated, all information from this subtitle until the end of this chapter, is obtained from a personal interview given by Mr. Raj Rewal to this researcher on June 25, 1997 in New Delhi.

<sup>9</sup> Rewal, Raj. "The Relevance of Tradition in Architecture Today" in Chauhan, Akhtar (ed.). *Journal of the Indian Institute of Architects*- Vol.55, Issue 2, June 1990. Bombay: I. I. A. Publications, 1990.

a situation wherein the society is composed of different sections, a unified architectural language is neither desirable, nor possible. Thus, Rewal prefers not to deal with all projects the same way, but instead responds to the social and cultural realities of the section of society for which a building is made. For example, in his project for the World Bank in New Delhi, Rewal has not hesitated to use “high” technology like extensive glass coverage on the side facing the courtyard, central air conditioning and state-of-the-art elevators, in conjunction with locally available materials and modern craftsmanship with traditional roots. But Rewal would not do this in, say, a low cost housing scheme.

*Technology:* The attempt at being specific to social and cultural realities in an architectural design does not mean that for the section of society which is more traditional, Rewal uses only traditional technology. Changes in technology, says Rewal, should never be ignored. The use of traditional technology today for either section of Indian society, according to Rewal, is unacceptable when modern technology is available. But much of “modern” technology, says Rewal, was developed in the West in an effort to address Western realities. A direct import of such technologies will be inappropriate. The technology to be used will have to be improvised with relation to Indian conditions. It should be assimilated with the intention of addressing Indian realities, to suit Indian culture, climate and traditions. Rewal has been widely known for such innovations in technology, which is a hallmark of his work.

An example of such a use of technology is demonstrated adequately in most of Rewal’s works which use local craftsmen who are traditional in their approach.

In such a situation, Rewal thinks that if they are asked to do what they only do traditionally, as most five star hotels will do in an effort to present an “ethnic” or “chic” look by replicating historical pieces, then the practice is not valid. Rewal prefers to introduce the craftsmen to modern technology like cutting tools and epoxy glues. In doing this, Rewal says a new vocabulary emerges. A certain transformation takes place, not just in their products, but even in their style of working, and a certain evolution takes place in their art. This makes even the craftsmen happy since they are learning something “rather than doing what their grandfathers did.”

*Climate:* As regards climate, Rewal thinks that the Indian culture from the earliest times provided a philosophical basis for seeing the unity of man and nature, where all phenomena in the cosmos are understood as being part of one being. The animate and the inanimate coexist in a continuous life system. This attitude has resulted in a rare sense of unity between man, his natural surroundings, and the built form. The passive energy saving systems evolved within this philosophical framework are very efficient. These passive systems can go hand in hand with “high” technology modern buildings.

### **The Concept of ‘Rasa’**

Another concern for Rewal is the “hyperspecialization” in today’s architecture. His deep study of historical cities has enabled him to look objectively at contemporary trends in architecture and what may be missing today.



*“The modern process of achievement through hyperspecialization can lead to a fragmented approach towards the designs, where the poetic and the psychic may be eliminated. The ancient civilizations which have not gone through the process of economic, industrial and commercial evolution have maintained a unified approach to the arts, sciences and spirituality. Would it be worthwhile to give up the wisdom of this holistic attitude while searching for a new architectural language?”<sup>10</sup>*

It is probably due to this reason that Rewal has incorporated the concept of *Rasa* in his architecture. The meaning of the Sanskrit word *Rasa* approximates the English word “flavour”, but in a more heightened version. It should not be confused with “character”. All theories of Indian art—poetry, literature, painting and so on—were based upon *Rasa*, according to Rewal. In architecture, this may mean the intentional “flavour” inserted in the experience of a building which can be brought about, according to Rewal, only if there is an effort at reintegrating building processes as one whole, as against the fragmented assemblage that a building is today. This holistic approach to architecture which is understood as being antithetical to today’s “hyperspecialization” in the building process, may enable an architect to achieve a coherence in his approach and give him an integrated view of a project. It is in such a situation that an architect can insert what Rewal calls *Rasa*. In architecture, this *Rasa* may be interpreted as the insertion of a singular and unique quality in experiential aesthetics which is in conformity with and adds to the function and purpose of the building.

The loss of the “poetic and the psychic” qualities of a building, which the insertion of *Rasa* is supposed to address, is adequately demonstrated in the “reductive”

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<sup>10</sup> Rewal, Raj. “The Use of Tradition in Architecture and Urban Form” in Ameen, Farooq (ed.). *Marg: A Magazine for the Arts*, Vol. 48, No. 3. Mumbai: Marg Publications, March 1997, p.63.

and “sterile” nature of buildings done in the International Style, whether they are houses, factories or schools. For Rewal, the International Style, therefore, needs something more, the insertion of *Rasa*. Rewal’s notion of *Rasa* is supposed to make his architecture more “poetic” and stimulate the human sense of the mind and soul. This would give a building a certain “aura”. The intention is to make architecture respond to not merely the functional, but also to certain “non-physical” needs. These “non-physical” needs are more psychological. The “aura” could be in the form of visual or tactile experiences which appeal to humans psychologically. A simple incorporation of a designed green space in conjunction with the work spaces in a building can stimulate the occupants’ thought process dramatically as compared to the “reductive” and “sterile” work environment provided by Modern architecture and the International Style, says Rewal.

### **Summary**

Thus, Rewal answers his question of how best to formulate an architecture which is right for the new and evolving sections of Indian society by attempting to continue the past into the present while using climate, social conditions and technology as form determinants. In addition to these “pragmatics”, he attempts to give a certain “aura” to a building in an effort to stimulate the human senses of the mind and the soul, and to make it more than “just functional” in a physical, material sense.

## **REWAL'S DESIGN STRATEGY**

In terms of practical design, according to Taylor, there are two main objectives in Rewal's work. The first objective has to do with structure in terms of its innovation and expression, as well as the external finish of the building as a whole. The second objective is the continuation of the traditional Indian built morphology at the level of "principles" rather than a superficial replication of forms. In trying to achieve these objectives, Rewal, according to Taylor, seeks an accord between the arts and craft, and traditional values and modernity, in an effort to create an authentic response to contemporary social conditions in India.

### **Structure and Finish**

As regards expression of structure and external finish, Taylor says that it has been a preferred means of expression for Rewal. The principal material used has been steel reinforced cement concrete (RCC), a material which has been widely in use in India since the beginning of this century. Such an expression means that the structure and its members are not hidden, but rather are displayed clearly on the outside and sometimes even emphasized. The use of modern materials in conjunction with the kinds of structural design that they afford, coupled with the intentional exposure of the structure, its material, the design and the truth of its presence, corresponds with some of the ideals of Modern architecture.

This move expresses the contemporary (i.e. the “modern” post-colonial era, in relation to the ancient Indian past) in terms of popularly used technology. The use of such technology, therefore, places the building in time (post-colonial India). As Rewal believes, the contemporary must be expressed as it is a living reality in India today. Modern technology cannot be dismissed as being Western since it is a reflection of the reality of the deep penetration of Western values into everyday life in India.

There does not seem to be evidence of innovation in terms of technology in the Central Institute for Educational Technology (CIET). But it is noticed that in Rewal’s work innovation is attempted where required and when necessary, rather than for the sake of innovation. Some of Rewal’s landmark works like the Hall of Nations, an industrial exhibition space, and the State Trading Corporation, a high rise office building, both in New Delhi, are examples of innovations. In the Hall of Nations which was built in 1970, the design is entirely of huge space frames, aesthetically positioned to create a clear span of 78 meters at a height of 21 meters. The shape is in the form of a pyramid sliced half way to the top. The entrances are at the corners with the corners sliced to create huge triangular entrance spaces. The original intention was to use steel members, but steel at that time was expensive in India and did not suit the budget. The consulting engineer and the architect devised a way by which the entire building was made of poured-in-situ concrete. The building has also been related to a giant expression of the traditional *jalis* used in palaces, mosques and other buildings in ancient India. But the design cleverly adapts to the climate. The members of the space frame and some intermittent in-fill

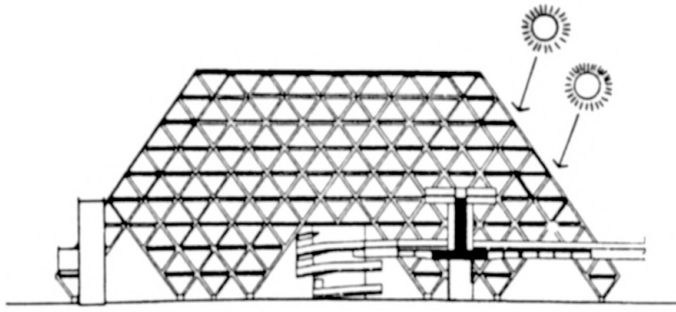
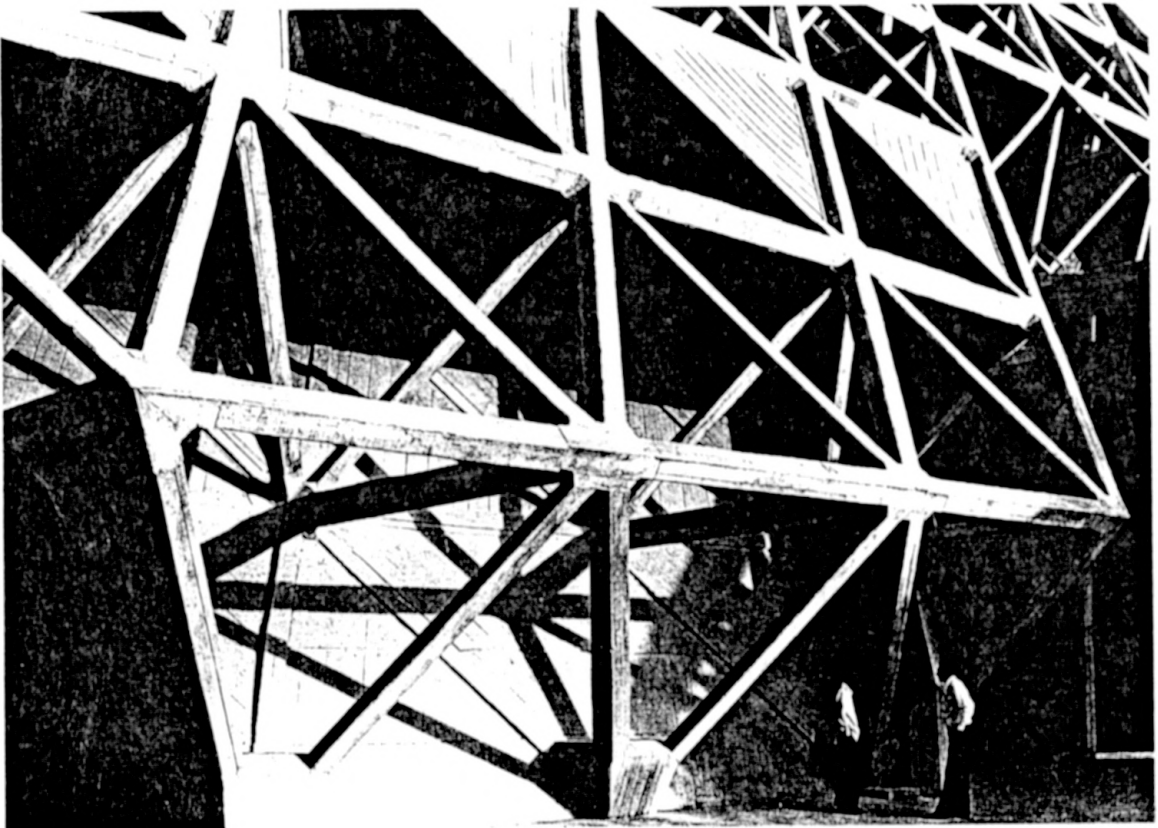


Fig. 9.2: The Halls of Nations, New Delhi.

Fig. 9.3: The gigantic scale of the structure of the Hall of Nations. (See relative human dimension).



panels effectively block direct sunlight while facilitating ventilation and gentle diffused day light. The building remains a landmark in the architectural history of India.

The State Trading Corporation, a high rise office building, is another example. Three tower blocks of varying sizes form the supports of floors created by huge poured-in-situ concrete *Vierendeel* beams which support floor slabs on the top and bottom of each such beam. The cut-outs in the web of each beam serve as openings for light and ventilation. The use of such huge members seems to have been necessitated due to climatological considerations and large spans in an attempt at arriving at an appropriate climate design for a high rise building. This building is another landmark in Rewal's career.

As regards cladding materials, Rewal has preferred to use either gray stone grit finish or the two types of locally and abundantly available sandstones—the red Agra stone and beige Dholpur stone. Both these stones have been used traditionally in northern Indian architecture. Numerous Moghul and British buildings have used these two stones. Rewal uses these stones not just to connect with the past, but also to establish the building's regional character. But both these uses seem to be secondary. As Rewal has mentioned time and again in his publications, the materials have been used not for representational purposes only, but also because they are extremely durable in the harsh climate of Delhi. Besides, they are cheaply available in the region.

In addition, according to Taylor, Rewal seeks to express the stones' intrinsic character and so uses various sizes, textures, colour variations, and structural combinations between and within the two stones, in conjunction with the reinforced concrete supporting members. This exploration of the materiality of the stones has led



Figs. 9.4 & 9.5: The State Trading Corporation, New Delhi; and its structure (below).

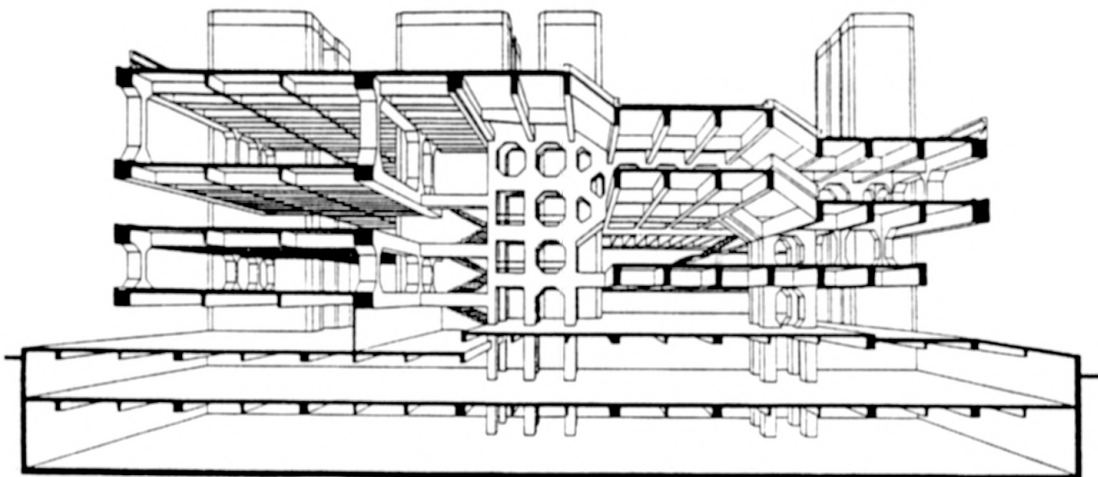




Fig. 9.6: The historic Lodhi Tombs, New Delhi—  
built out of Dholpur stone.

Rewal to use craftsmen to further experiment with slabs and blocks. Thus, in the World Bank building, a recently completed project, we see in the courtyard a huge fountain bowl of about 2.5 meters in diameter carved out of a single block of Dholpur stone.

The use of local materials fulfils another function besides those mentioned above. It demonstrates the link between the craftsmen, the architect and also the contractor, who may help the architect get required labour and craftsmen to sculpt and compose in the structure. This unity helps reintegrate the separation and isolation of the



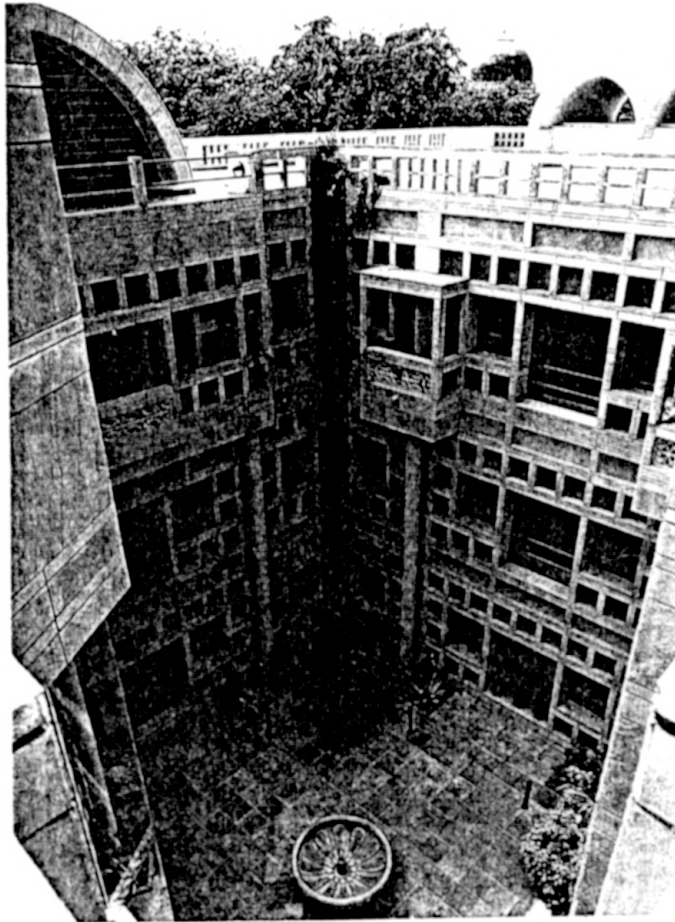


Fig. 9.7: The monolithic fountain bowl in the court of Rewal's World Bank building, New Delhi.

arts and the crafts within the design of the building. Hence, while the use of concrete and its innovative use demonstrates the Western influence on Indian architecture today, the use of local materials fulfils many functions, prime among them is that it helps maintain a unified approach to the act of building.

## **Traditional Morphology**

As regards traditional morphology of the built environment, Rewal's extensive study of historical cities in northern India and in central Asia, has given him an understanding of the structure and form of spaces used by people in these areas. The intention behind studying historical cities in central Asia was to go to the roots of the kind of spaces brought in by the Moghuls from central Asia and Persia. The merger of these architectural forms and structure of spaces from central Asia into the pre-Moghul mainstream culture of India is significant in terms of the transformation in the traditional morphology of the built environment.

Thus, the pre-Moghul and the Moghul eras are seen as the two layers of architecture in the history of Indian architecture for Rewal. As has been discussed earlier, the colonial model is considered foreign by architects and non-architects alike, and so, is never considered as a separate contributory layer, but rather as an interruption in the progress of the culture of architecture in India. Rewal also does not incorporate any elements from the colonial model.

The primary sources for Rewal's understanding of the morphology of the traditional built fabric in India are the historical cities of northern India, like Jaisalmer, Jodhpur, Fatehpur Sikri and so on. Based upon the study of these cities, Rewal, in his endeavour to penetrate traditional architecture to the level of "principles", has identified

six such components of function, the interaction of which forms the continuing traditional morphology which Rewal talks about. These components are:

- 1) Urban Fabric
- 2) Clusters
- 3) Courtyards
- 4) Streets
- 5) Gateways
- 6) Roof Terraces

Rewal thinks that the components of the morphology may be used in isolation or together, either way they are relevant in today's Indian culture. These six components are expressed in conjunction with today's technology and local materials. Thus a contemporary expression of architecture for today's "new and evolving" conditions of Indian society is achieved.

The following is a brief explanation of each of these components:

1) Urban Fabric

The fabric of high density settlements of Jaisalmer, Jodhpur, Shiraz, Toledo, and many other cities in the hot and dry climates follows a certain common pattern which, according to Rewal, is based upon a response to the harsh climate. The pattern is a closely related composition of solids and voids. The densely packed

buildings 'breathe' through the voids (courtyards) at not just a single level, but at varying levels which are connected to the fabric of the narrow streets. The overall configuration allows for cool shadows and air currents which flow within the fabric. The courtyards also allow for strolls during the mild evenings. There is a certain sense of enclosure and continuity throughout the city. This gives a distinctive identity to the spaces created.



Fig. 9.8: The high density settlement of Jaisalmer—a response to the harsh climate.

Rewal has incorporated such a pattern in his numerous housing schemes, facilitating pedestrian movement and casual social encounters in public and semi-public spaces, and yet accommodating the automobile within such a layout. According to Rewal, "The human scale of these spaces allows inhabitants to participate in the theatre of the street rather than merely view it."<sup>11</sup>

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<sup>11</sup> Rewal, Raj. "Evolution and Metamorphosis" in Taylor, Brian Brace. *Raj Rewal: With an Essay by Romila Thapar*. London: Mimar Publications, Concept Media Ltd. 1992, p.27.

## 2) Clusters

The main understanding here based upon the traditional cities of Afghanistan, Algiers and some villages in Spain, besides northern India, is that building clusters are based upon a certain commonality with essential variation between each member of a cluster. This pattern helps retain a certain identity and yet forms a cohesive cluster within the variations. The variations could be at the level of facade treatment, overall volume or at the level of fenestration. Coupled with this commonality within



Fig. 9.9: A cluster of houses in an Afghan village.

variations, Rewal also provides pedestrian environments while creating enclosures through the configuration of buildings and their forms.

## 2) Courtyards

*"Well defined community space is an integral part of Eastern cities. The public courtyard accommodates a multitude of activities ranging from religious activities like marriage ceremonies to the celebration of secular festivals. They formed the basis of planning for temples, mosques, madarsas, educational institutions and palace complexes. The interlocking courtyards at Fatehpur Sikri, Padmanabhapuram, and Khiva, with their varying scales to accommodate*

*different functions, embody principles of design which have important lessons for contemporary public buildings, where people congregate."*<sup>12</sup>

Additionally, the courtyards in traditional buildings exhibit, according to Rewal, the principle of creating a micro-climate free from dust, heat and sandstorms. For Rewal, such courtyards may be created by external walls, verandahs or by rooms. These courtyards act as light and air wells in which cool night air gets trapped, keeping the surrounding rooms cool until late morning or noon. The sun's rays touch the courtyard in the afternoon and cause the heated air within to rise, thereby creating convection currents. The resultant airflow ventilates the surrounding rooms. Many times, in historical buildings, there are terraces at the upper levels around the courtyard. These terraces,

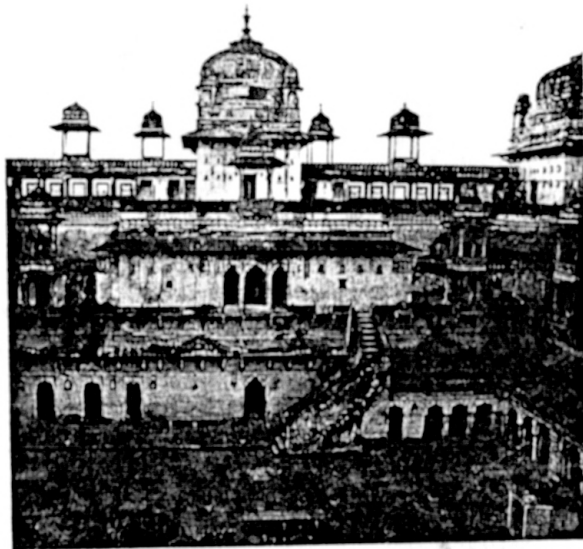


Fig. 9.10: The palace at Orchha, central India, is a large court surrounded by smaller courts at various levels.

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<sup>12</sup> Rewal, Raj. "Evolution and Metamorphosis" in Taylor, Brian Brace. *Raj Rewal: With an Essay by Romila Thapar*. London: Mimar Publications, Concept Media Ltd. 1992, p.29.

besides facilitating ventilation, also provide a view downward into the courtyard contributing to the enlivening of communal activity.

The courtyard, therefore, besides performing its function of community gathering, also facilitates the maintenance of comfortable temperatures and ventilation in the surrounding rooms. Rewal has used this principle in almost all of his low rise buildings.

#### 4) Streets



Fig. 9.11: The narrow streets of Jaisalmer.

The street patterns observed by Rewal, often change directions and present elements of surprise. The movement patterns of the city of Jaisalmer are full of fun, pleasure and surprise. Pedestrian streets contribute to community interaction, besides acting as pathways. They open onto courtyards, or wide spaces which serve as places of rest for travelers. They are narrow passages flanked with buildings on both sides. Such a configuration ensures that the streets are shaded during most of the day. There is, according to Rewal, a certain enchantment while walking down such streets as they consist of pauses, points of rest and changing vistas which make the movement pleasurable.

#### 5) Gateways

Gateways were an integral part of the historical city fabric. Within the city, they helped define zones and kept intruders out. For Rewal, they act as punctuation marks in the urban form and each gateway is the point of initiation of a new sequence of spatial experiences. They allow for change and yet contribute to a certain coherence within the overall environment. A gateway was defined by either a bridge formed by terraces of two houses at an upper level, creating a through opening below, or by the joining of two rooms of different houses above a point of entry. Thus a framed opening would be formed. These openings usually had shutters which were closed at night for security purposes.



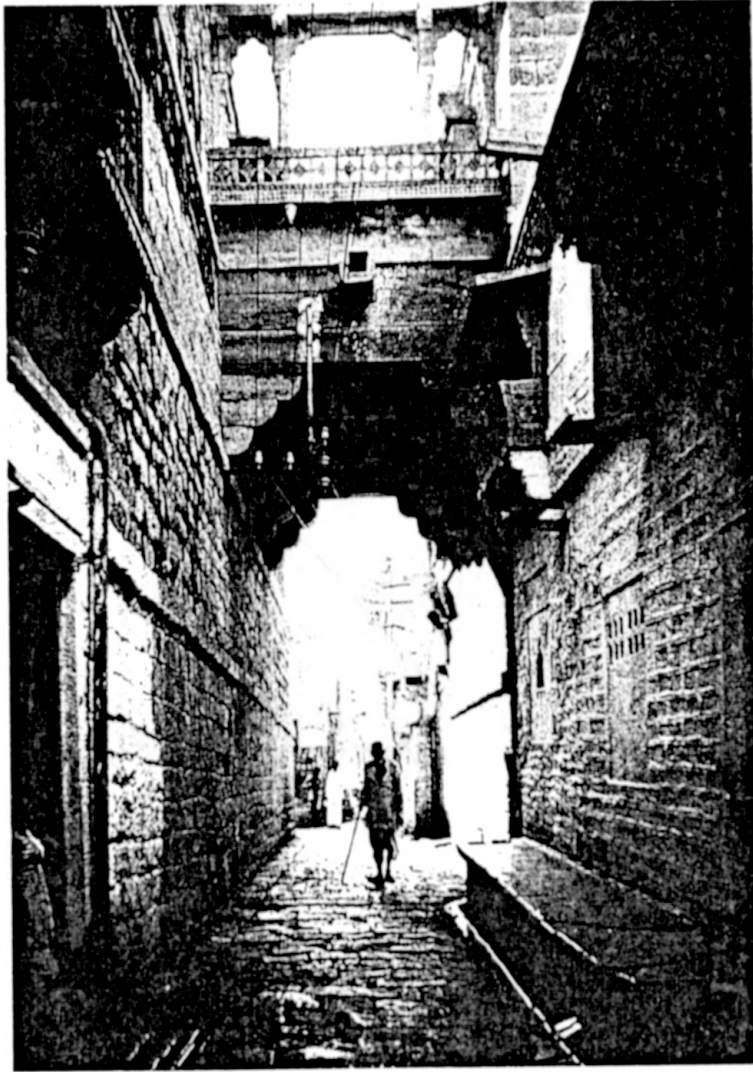


Fig. 9.12: A gateway in Jaisalmer—defined by a bridge connecting two houses.

#### 6) Roof Terraces

Roof terraces have always been an essential and integral part of traditional architecture in hot climates. They give privacy to a family while enabling members of the family to step out into the open in a densely populated environment. A terrace also provides, during summer evenings, a necessary “living” area where all in a family can step out to enjoy the cool evening. During winters the roof terraces provide a private space for exposure to the warm sun, since the winters, in central and south Asia are

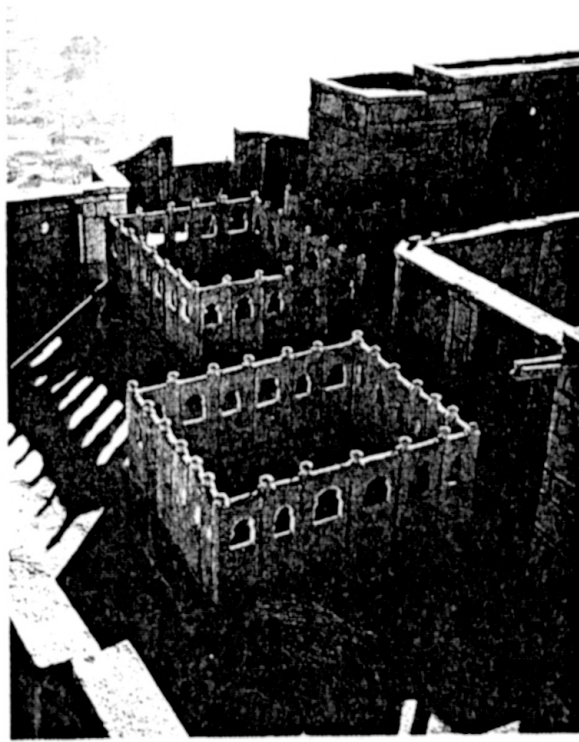


Fig. 9.13: Roof terraces in the Jaisalmer fort.

always sunny. For all these reasons roof terraces have typically been an essential feature of traditional hot-arid climate architecture, along with the courtyard. The roof terraces also connect visually to the communal activity in the streets or the courtyards, while yet retaining a sense of privacy.

Thus, the above six components are traditional architectural elements at the level of principles as they relate to the family and community life. They are not intended to be used as just representational physical forms or embellishments. Rewal is against the mere replication of past forms of any kind. The six principles above, Rewal says, are manifested rationally in terms of today's technology and the forms afforded by it. For instance the shaded roof terraces of traditional Rajasthani architecture had

decorative umbrella-like domes on a square or rectangular base supported at the four corners by columns. These were called *chhatris*. In Rewal's buildings, such small shaded terraces are provided, but in the aesthetic afforded by the rational technology of today. Thus the "principle" is maintained, but the aesthetic changes, due to technology.

It is through the interaction of the above six components that Rewal thinks the three elements which determine architecture, i.e. social conditions, climate and technology, are manifested to create an architecture specific to a society, a region and its time.

The concept of *Rasa*, as has been explained earlier, is infused into the building at the time of its making. According to Rewal, the modern architecture of the west and traditional Indian art have close parallels. The pioneers of Modern architecture emphasized the beauty of raw materials, their grain, texture, shimmer and so on. Traditional Indian architecture, which has always been based on craftsmanship, has also always respected and exploited the nature of materials. According to Rewal, no distinction was made between the functional, the decorative and the symbolic. These three aspects together formed a rich design. The functional arrangement of spaces together with the craftsmanship of materials created volumes, with a certain emotional flavour or poetic mood in a building. These flavours could be serenity, romanticism, power, vigour, friendliness, and so on.

Rewal gives the examples of the Padmanabhapuram temple as being serene, the Taj Mahal as displaying lyrical romanticism, and the Jantar Mantar observatory in Delhi as portraying vigour. The concept of *Rasa*, for Rewal, is not relegated to the past. It is used in Urdu and Hindi poetry reading sessions even today. Such sessions can be found in the northern Indian city of Lucknow, for example. Also,

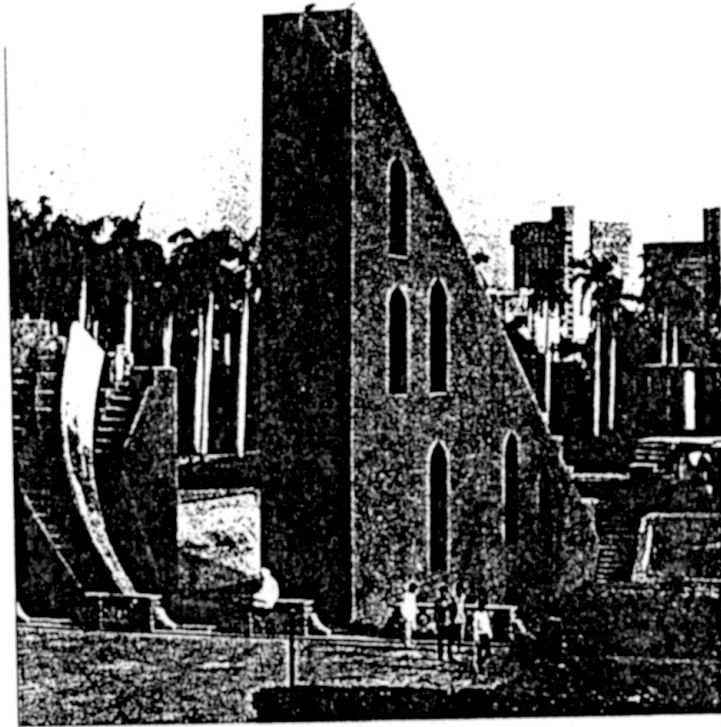


Fig. 9.14: The Jantar Mantar observatory, New Delhi—a *rasa* of vigour.

the concept of *Rasa* was not limited to literature alone. It encompassed all the arts. It is possible, Rewal says, that regardless of the function of a building today, whether it is an exhibition space or a television studio, that an appropriate *Rasa* can be given to it.

## CHAPTER X

### THE CENTRAL INSTITUTE OF EDUCATIONAL TECHNOLOGY

The Central Institute of Educational Technology (CIET, 1988-1990) is located on the campus of the National Centre of Educational Research and Technology (NCERT), a research facility for development of educational tools and infrastructure for child education. The CIET is specifically concerned with modes of instruction, developing multi-media programs for use as educational tools. The CIET contains two television studios and two sound recording studios, along with production rooms and ancillary facilities. There are classrooms, seminar rooms, projection facilities and facilities for teachers and broadcasting specialists who may assist in development of the teaching aids to be used in schools throughout the country.

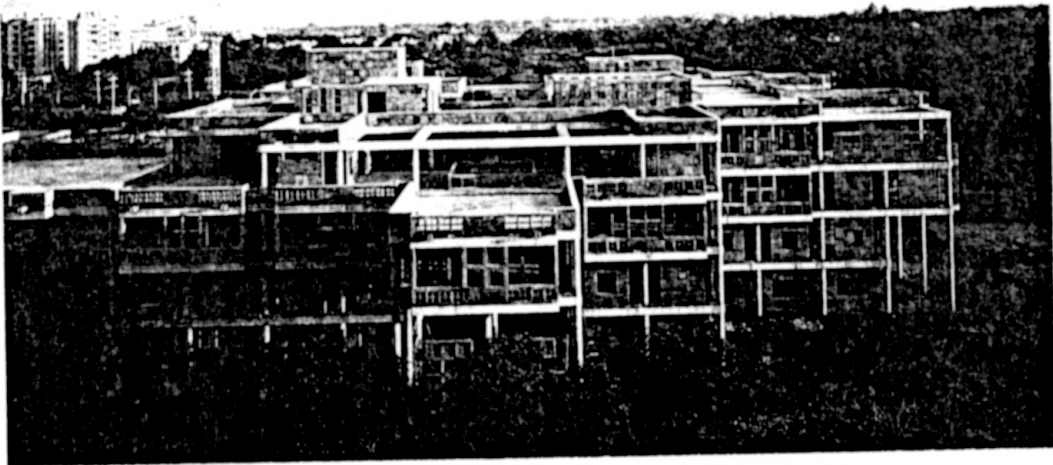


Fig. 10.1: The Central Institute of Educational Technology, New Delhi.

According to Taylor, Rewal wanted to provide places that could function as open air multi-purpose television studios. The design is built around two interlinking courtyards, one near the entrance, which is the smaller of the two, and the second around

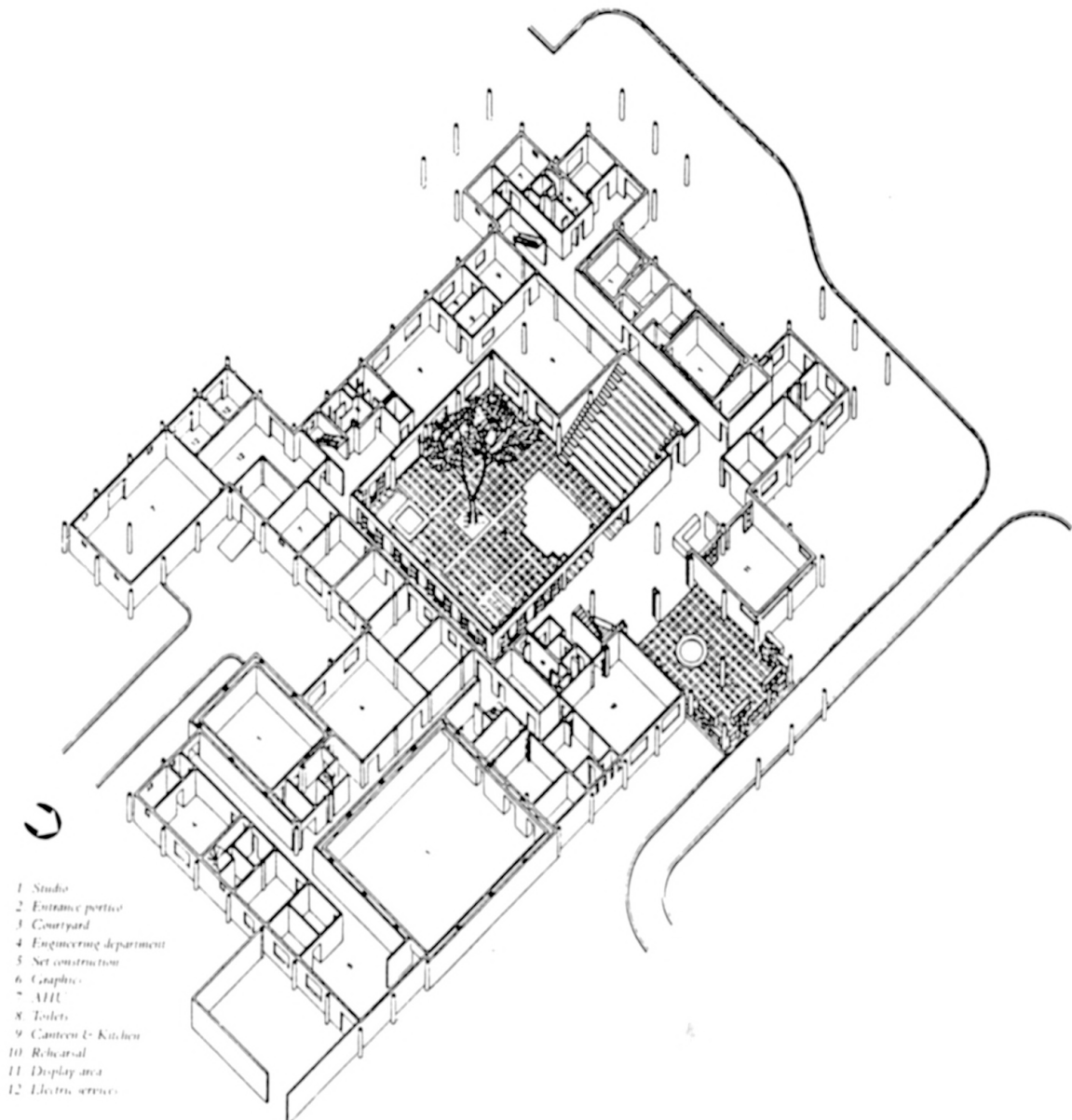


Fig. 10.2: The two interlinking courts in the CIET.

a pre-existing tree. One enters the building on the northern side of the smaller courtyard under a mass projecting at the second floor level. The gateway under the projection is defined by two “T” shaped elements which provide the supports for the grilled shutters of the gate. These “T” shaped elements are made of square panels of the locally found red sandstone called “Agra” stone. These panels are decorative in nature and contain a see-through carving. There are two other such vertical elements placed a little away from and perpendicular to the plane of the elements supporting the gate shutters. These four vertical “T” shaped elements help define the limits of the smaller court in the direction of the entrance. (See figures 10.3 – 10.7 on the following pages).

The smaller courtyard contains a single tall central column that is seen as one enters through the gateway, beyond which is a water pond. The idea behind introducing this smaller court and the water pond, according to the Rewal, is to welcome the visitor to a serene and cool atmosphere as s/he enters from the busy streets outside. The temperature, this author noticed, suddenly drops and, aided by the still water in the pond and the towering isolated column near the pond, a feeling of calm is experienced in association with the coolness around. Thus, introduced to the building, one proceeds further.

Across the pond are the door panels which lead into the double height entrance lobby which is sandwiched between the two courtyards. The larger courtyard has an open air stage and amphitheater seating; it is enclosed at ground level by the main entrance hall, artists’ rooms (rehearsal and display areas), some offices, studios

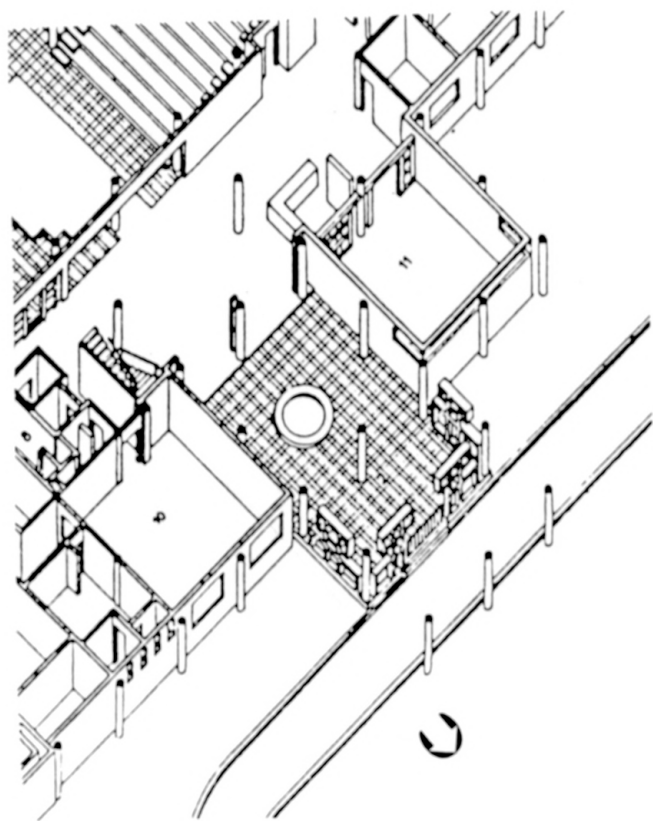


Fig. 10.3: The entrance court and the four "T" shaped elements defining its northern boundary.

Fig. 10.4: The projecting mass above the entrance.





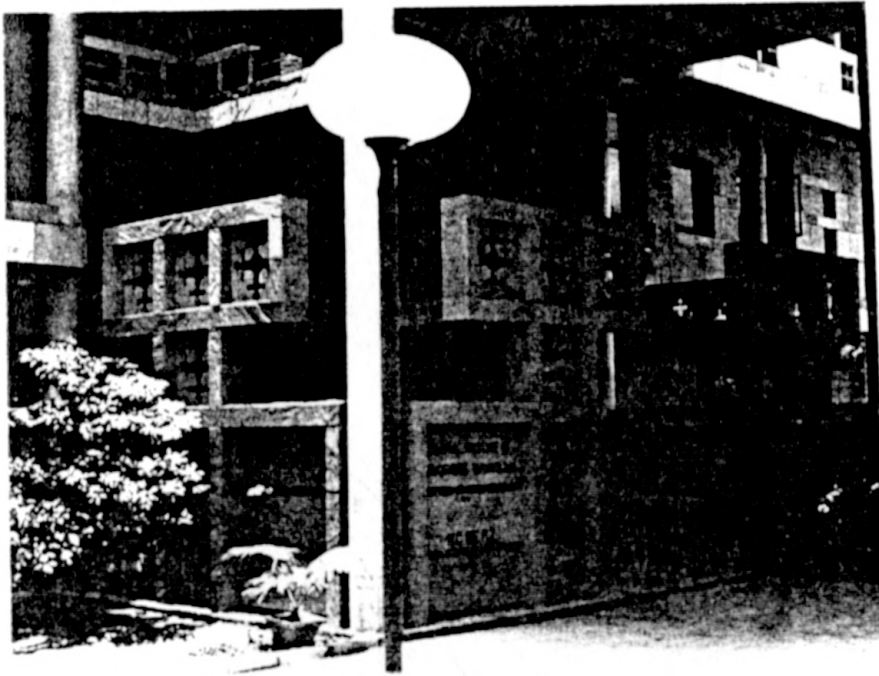


Fig. 10.5: The four "T" shaped elements defining the entrance.

Fig. 10.6: The see-through carvings on the panels of the "T" shaped elements.

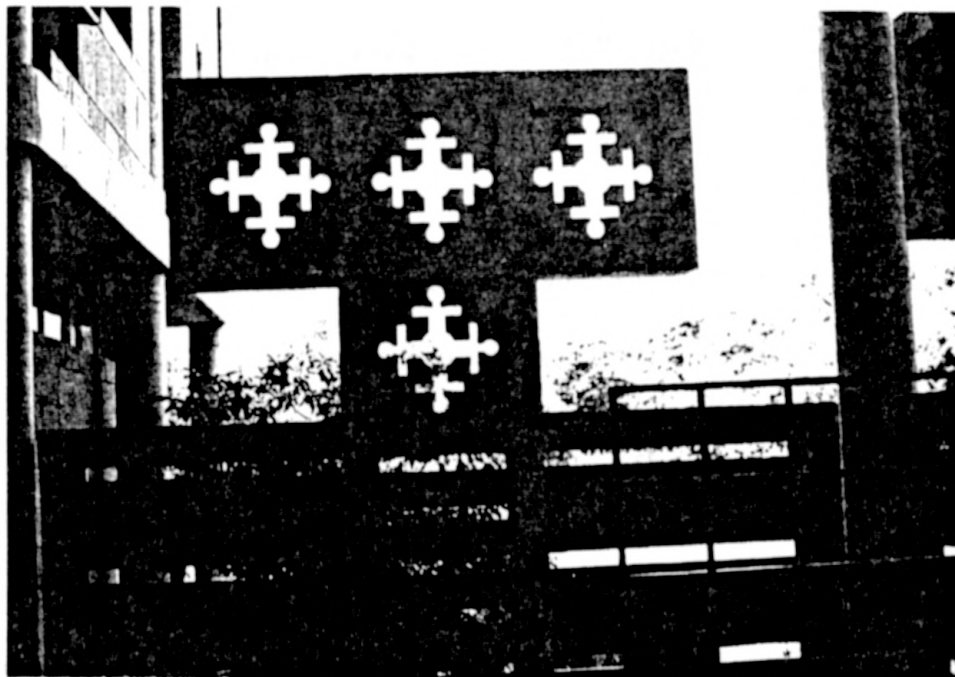




Fig. 10.7: The column and the water pond in the entrance court.

and canteen. The courtyard is surrounded all around (except certain portions) by passageways open to the court beyond which are the enclosed rooms. This pattern of room layout is visible on the upper floors also. The pre-existing tree is the focal point of activities. (Several other trees, smaller in size are now placed along the periphery of the court.) The courtyard is intentionally reminiscent of the *madarsa* (a traditional school). The first floor consists of rooms for film-editing, production, storage and other ancillary functions.

Academic functions dominate the second floor, while the other functions consist of a library, meeting rooms, and offices. On the upper most floor, the rooms are scattered apart with little continuity of the built mass. This is to make way for the roof terraces which overlook the surrounding parks and the courtyard. These terraces can be used for outdoor discussions and the balconies can be used for filming. The functions here consist of production facilities and administration. The interior floor area in the CIET progressively decreases on every floor.

Opposite the amphitheater, beyond the rooms which are adjacent to the courtyard, are the very large span studios for filming. These areas are accompanied by set construction areas, the engineering rooms, some service rooms and the graphics department. This area juts out of the rough square layout of the building and forms a secondary mass in plan of the CIET.

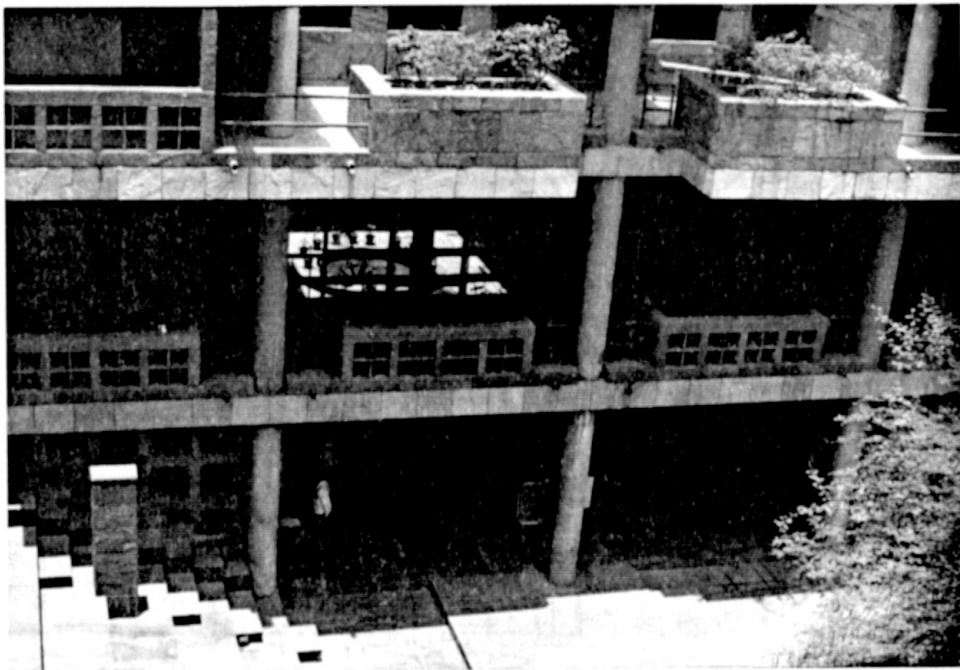


Fig. 10.8: The entrance lobby sandwiched between the two courts.

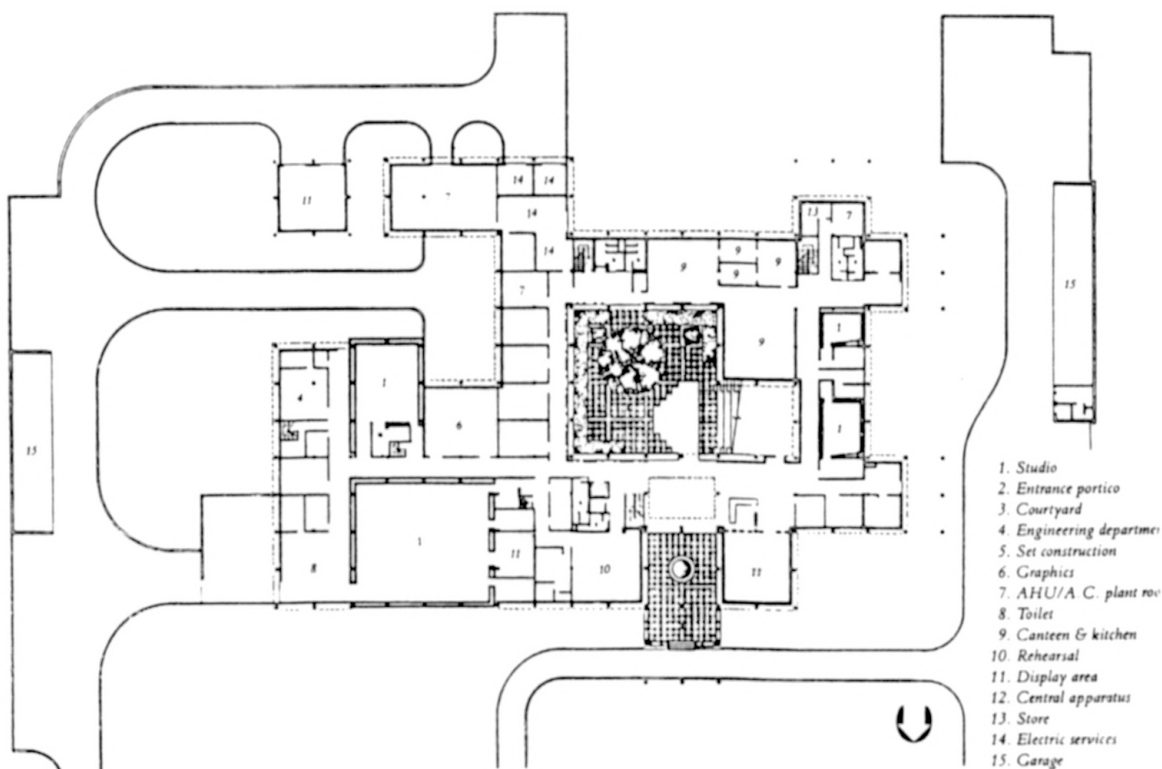
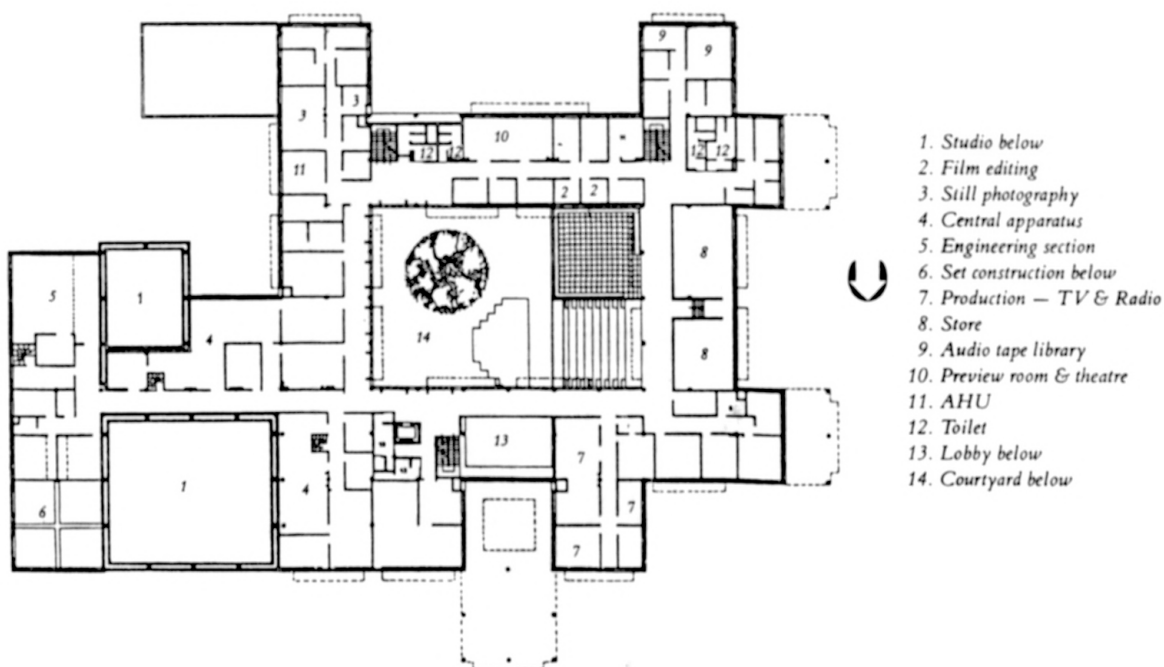


Fig. 10.9: The ground floor plan.

Fig. 10.10: The first floor plan.



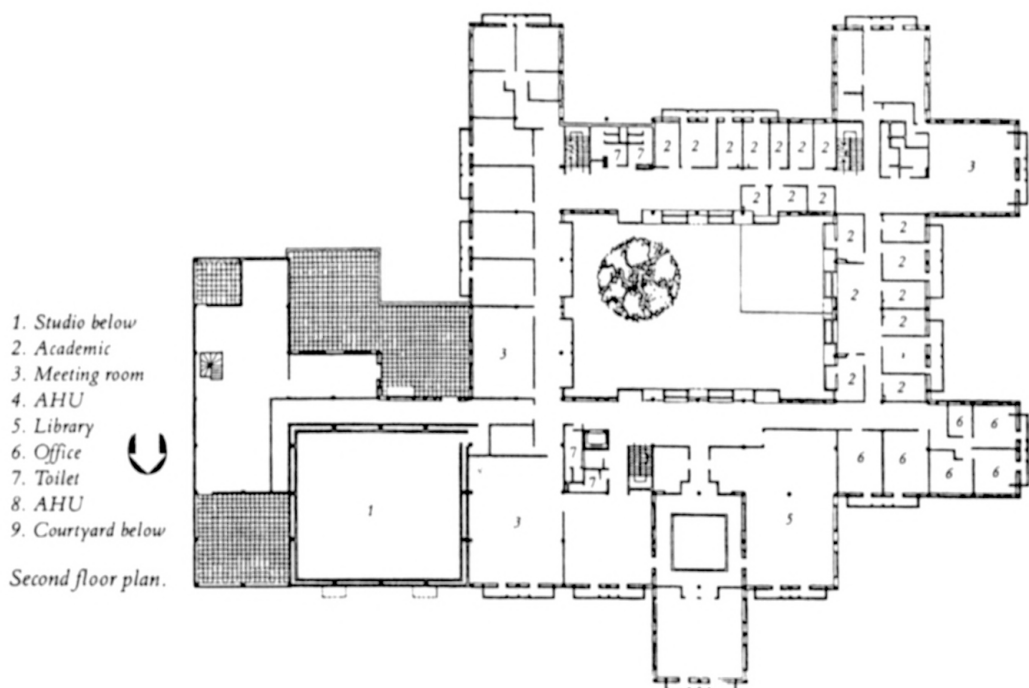
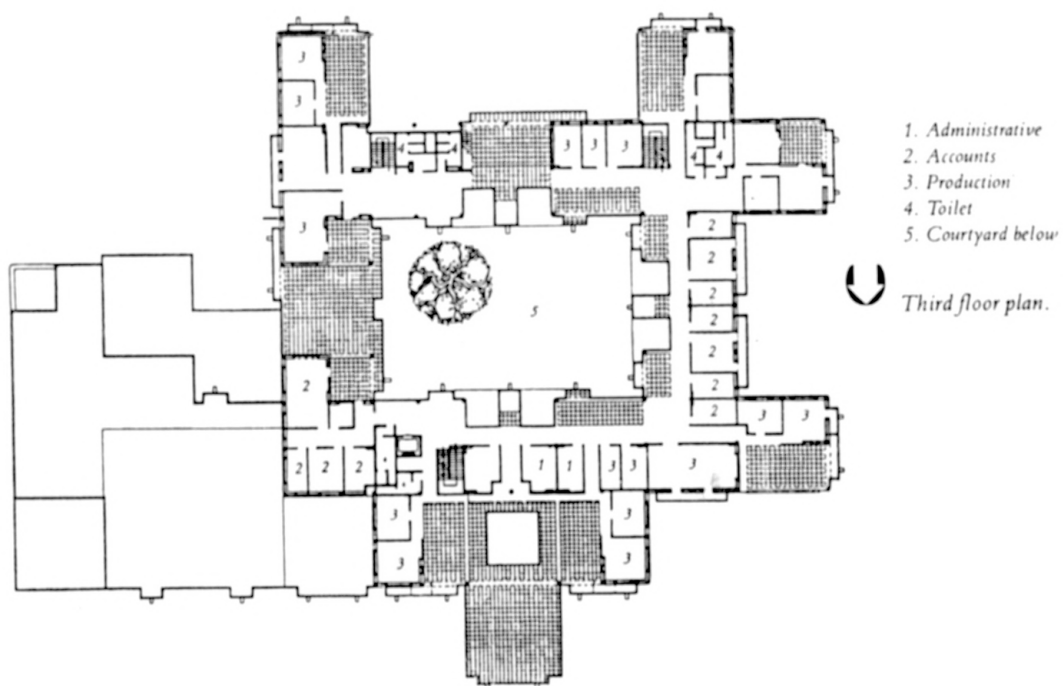


Fig. 10.11: The second floor plan.

Fig. 10.12: The third floor plan.



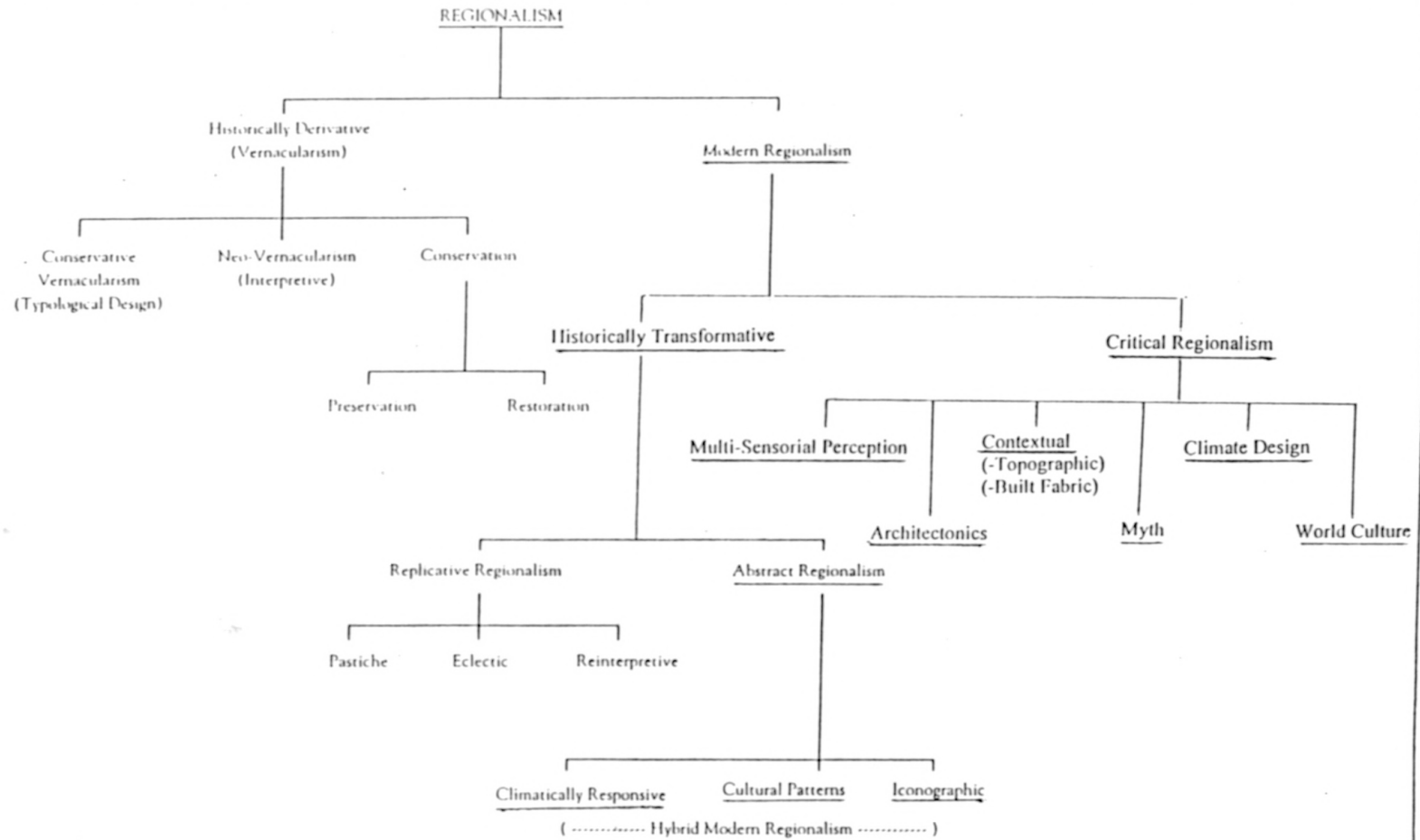
## **THE STRUCTURAL SYSTEM**

The structure is based on a modular grid of circular reinforced cement concrete columns and beams supporting prefabricated waffle slabs. The waffle slabs have been kept exposed as is the rest of the structural system. The internal spaces have been determined by variations of this modular grid. At the periphery, the circular columns are not in a continuous plane with the in-fill walls. They project out displaying the circular form of the columns. The columns and the beams on the external facade are left exposed. The in-fill, as has been mentioned earlier, is clad with the locally available Agra stone and Dholpur stone. Having discussed the layout and structure of the CIET, we will now attempt to relate it to the *Revised Taxonomy of Regionalism*, reproduced again below.

### **The CIET as “Abstract Regionalist”**

#### ***Cultural Patterns***

Rewal prefers an architecture of historical continuation at the level of “principles” rather than superficial imagery. Also, Rewal prefers not to use historical themes out of context as representational of the culture of the past. Rewal’s intention, it appears, is to integrate the spirit of architectural modernism and related technology within the continuing mainstream of Indian culture. The intention of such an integration is as against the “replacement” of western values in the mainstream Indian culture of



THE REVISED TAXONOMY OF REGIONALISM

today. When talking about culture in relation to Rewal's work, it is necessary to mention that his practice addresses the culture of northern India, which has been, for several centuries now, a mix of Moghul and pre-Moghul cultures. As against such a hybrid culture, the southern Indian portion has been historically relatively free of major influences from the Moghul rulers. Thus, the "principles" of traditional architecture, which Rewal identifies and uses, are specific to the northern Indian region in which his practice is concentrated. The architectural "principles" he has identified and used may not be valid in the south.

Having established that Rewal is addressing northern Indian culture, we can now attempt to examine how the "principles" he has identified are incorporated in the design of the CIET.

The very conception of the CIET seems to be in response to the western influences in India which began with the colonial period. This influence is what Correa calls the "Age of Reason". The advent of this Age of Reason in India was reinforced with the late prime minister Nehru's decision to initiate the process of industrialization to mark a new beginning for India while putting behind the "bad dream" of the colonial past. The process of industrialization being western in origin, compelled radical changes in the education methods and content in India. This change, obviously, involved the incorporation of the western model and content of education to enhance the process of industrialization. At the time of Nehru's decision, and subsequently for a few decades, traditional Indian methods of transmission of knowledge seemed to continue. An example



would be the establishment of “Shantiniketan”—an equivalent of a university which uses traditional Indian methods and content of education—begun by the late Nobel Laureate for literature, Rabindranath Tagore.

Today, the technologies of television, computers, internet and other forms of communication coupled with the fact that India opened her economic borders for foreign economic investment, has seen the diminishing of traditional methods and content of transmission of knowledge. The traditional “schools” are fast being replaced by institutions which propagate the knowledge and understandings of the Age of Reason through the language of English. To participate in the technological realm of today, (a realm which is ever-widening in today’s India), a certain common basic knowledge seems to be required. This common basic knowledge, it appears, has little similarity to the traditional Indian methods and content of knowledge. The government of India, in its effort to participate in an increasingly interactive and interdependent world, is attempting to propagate this common knowledge base, especially to the far flung rural communities throughout India. The attempts are being made through the use of television and radio programs. It is to facilitate the production of such programs that the CIET was commissioned.

The CIET is, therefore, an attempt to address the present cultural realities in India. These realities are that international interdependence today is inevitable, and to facilitate this international dialogue, a certain type of basic knowledge, which may be foreign in nature, will be required of everybody in India. The cultural reality is that this

type of basic knowledge is not inherent in Indian culture. Thus, the CIET attempts to fulfil this need, especially in the rural areas of India. This is the first level at which the CIET seems to address contemporary culture.

Rewal's intention is to evolve a suitable architecture for the "new and evolving" sections of Indian society. As has been discussed before, he sees Indian society as consisting of two sections. It seems necessary to reiterate the characteristics of these two sections of Indian society, and their implications on the architecture of Rewal, in an effort to understand the relation of culture in Rewal's architecture. The first section is that section of society which is educated in the western methods and is influenced to a large extent by Western values and culture although retaining a strong traditional base. The other section of Indian society is that which has not obtained western education and is, therefore, relatively free of western influences. This latter section of society is almost completely traditional in nature. But regardless of these differences, according to Rewal, both sections of Indian society have experienced certain common fundamental changes which may not be physically visible. It is, therefore, Rewal's contention that the whole of Indian society is undergoing a cultural change of a certain kind, to varying degrees.<sup>1</sup> It is to such a changing culture that Rewal's architecture is addressed. Additionally, Rewal's architecture also responds individually to the realities of each section.

The CIET, in its attempt to address the cultural reality of the west-oriented section of Indian society, makes use, therefore, of the western concepts of architectural modernism in its structure, technology and materials—aspects with which

that section of society can identify. Such a use of some concepts of architectural modernism are used in conjunction with a morphology of traditional “Indian” spaces, thus reflecting the dual nature of the culture of the western-educated, yet tradition-minded users of the building.

The validity of the use of such a morphology as a reflection of the culture of a society has been attested to by Amos Rapoport.<sup>2</sup> The example given by Rapoport is with relation to the need for social intercourse in a community. Rapoport says that the meeting of people is a basic need in a society. But what is important is not the fact that people meet, but the place in which they meet, whether it is in the house, the café, the bath or the street. Several examples have been given by Rapoport. In France, for instance, guests were never invited to the house. They were invited to the café only. Similarly, in India, it can be argued that the use of a courtyard for interaction in a communal building is a reflection of the culture of Indian society. While a courtyard may be used for communal interaction, other spaces used for other purposes can also be appropriate expressions of a culture.

Rapoport also speaks of the issue of constancy and change in relation to such uses. In a society, *needs* remain constant, while the building forms as regards how these needs are fulfilled change over time. Thus, the roof terraces identified by Rewal, for example, fulfil a need for privacy while being out in the open. They also fulfil the need to go out into the open during the mild summer evenings or the sunny winter days.

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<sup>1</sup> Said in a personal interview given by Mr. Raj Rewal to this researcher on June 25, 1997 in New Delhi.

<sup>2</sup> Rapoport, Amos. *House Form and Culture*. Englewood Cliffs, N. J.: Prentice-Hall, Inc. 1969.

Similarly, the streets as pedestrian meeting places, the gateways for establishment of domain, clusters to demonstrate a commonality and the overall urban fabric which may be called a sum of all the above spaces—all convey the cultural expression of Indian society. Along these lines, it appears that Rewal's strategy is a sound and appropriate method for identifying the "principles" which are the "constants" as defined by Rapoport, and expressing them in contemporary form.

The next logical question would be: How is the traditional morphology expressed in the CIET? The following is an attempt to identify the morphology of traditional spaces used in the CIET. Rewal, as has been mentioned earlier, has identified six components which form the traditional morphology in northern Indian architecture. These components are (a) Urban Fabric, (b) Clusters, (c) Courtyards, (d) Streets, (e) Gateways, and (f) Roof Terraces.

These six components are at the level of the city and only some of these components can be applied to individual buildings. Those components which can be applied to individual buildings are (a) Courtyards, (b) Gateways, (c) Streets (corridors and hallways), and (d) Roof Terraces.

#### (a) Courtyards

Although it may be argued that courtyards are conventionally used for climatological purposes, the explanation of why Rewal uses courtyards, as described

earlier, shows that the use of courtyards in traditional northern Indian architecture is as much for communal purposes as it is for climatological purposes. Rewal has demonstrated through analyses of various historical examples that the courtyard was used for communal activities like marriage and religious ceremonies, festivals, meetings and so on, besides being part of everyday life. The courtyard has been historically associated with the culture of northern India.

The CIET is planned around a courtyard which is designed for communal activity. It is used as an open space by everyday users since it adjoins the peripheral covered corridors. People tend to spill onto the courtyard while waiting or strolling in the corridors, as did this author during his visit to the building. Within the courtyard is a one-step raised platform in front of which are the ascending stepped tiers for an audience. The raised platform and the stepped tiers are meant to serve as a stage for open-air meetings or communal gatherings. The arrangement is also meant to be used for outdoor film shooting and rehearsals for theater productions to be broadcast on television. During functions, the surrounding covered corridors on all upper floors act as viewing galleries during functions.

#### (b) Streets

The CIET is an individual building and so will not incorporate streets in the way traditional northern Indian towns used to. But the intention here is to identify whether the corridors have been laid out according to the way streets in traditional Indian

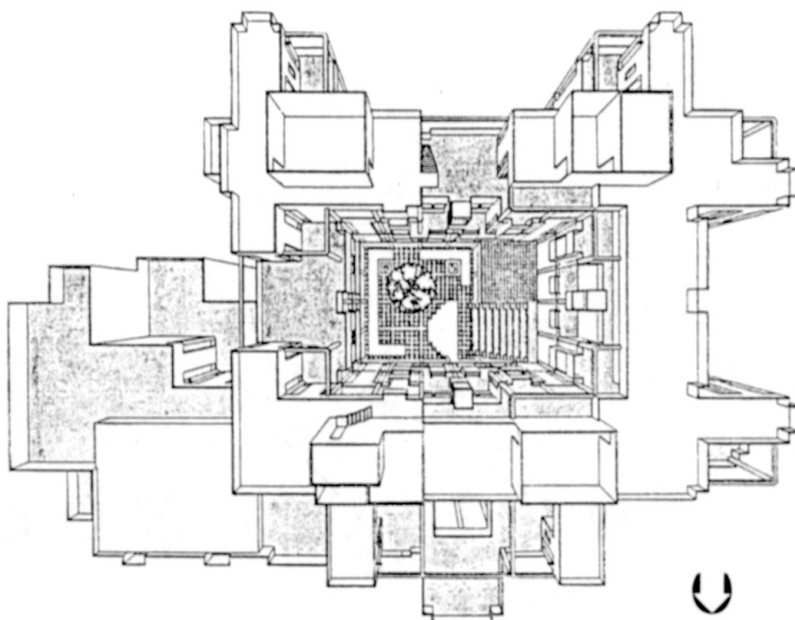


Fig. 10.13: The courtyard in the CIET.

Fig. 10.14: The ascending tiers of the seating area.





Fig. 10.15: The viewing galleries above.

towns were laid out.

The corridors in the CIET are covered and so the intention of making them narrow to keep them shaded does not hold good for the purpose of our discussion. The corridors which surround the court on every floor in the CIET are not narrow and measure about 2.5 meters or more in width. But there are “pauses” (broad pockets) along some of these corridors. These “pauses” are analogous to the “points of rest” seen in the traditional street patterns. Such pockets can be seen on all the floors.

On the ground floor, the corridors appear to be a covered extension of the court. Despite this, all points of turning along the corridors around the courtyard except that on the northeastern corner have such pockets on the inside. These pockets at the

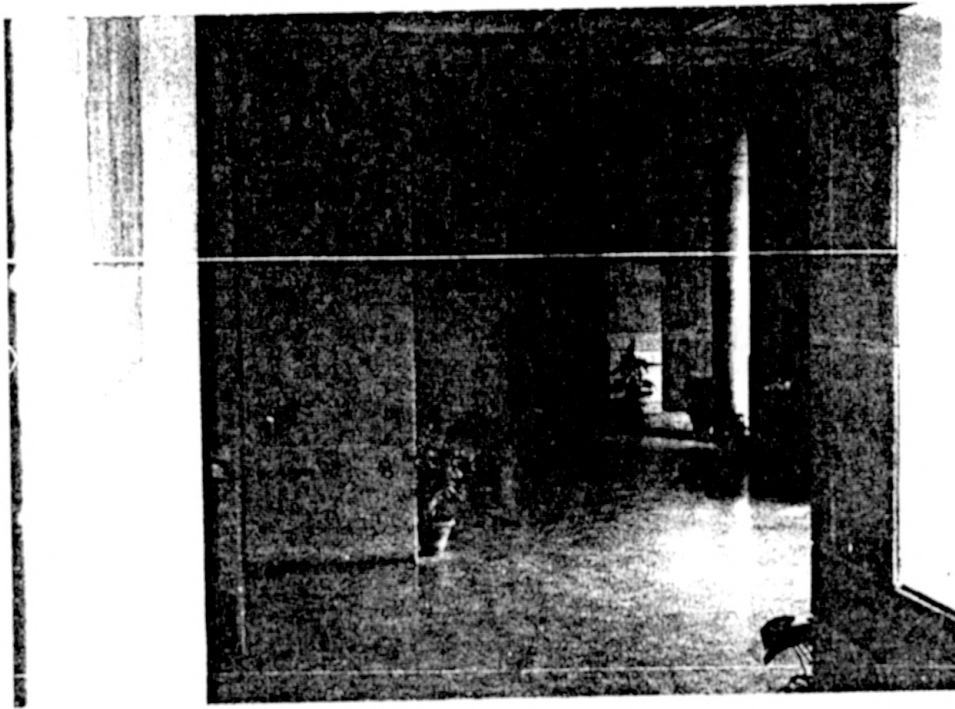


Fig. 10.16: The “points of rest” along the covered corridors.

turning points are also seen on the first floor plan. Also, a separate pocket between the two store rooms on the west has been created. This pocket is reached after climbing a few steps. It has windows looking to the west giving light and a visual feature at the “point of rest”. From this pocket, the two store rooms on either side are accessible.

The second floor plan shows not only the pockets at the point of turning along the corridor, but also along the corridors facing the courtyard. On the eastern side, for instance, two broad “points of rest” jut out of the line defining the corridor. The alignment of the corridor is maintained visually by the insertion of two columns in the



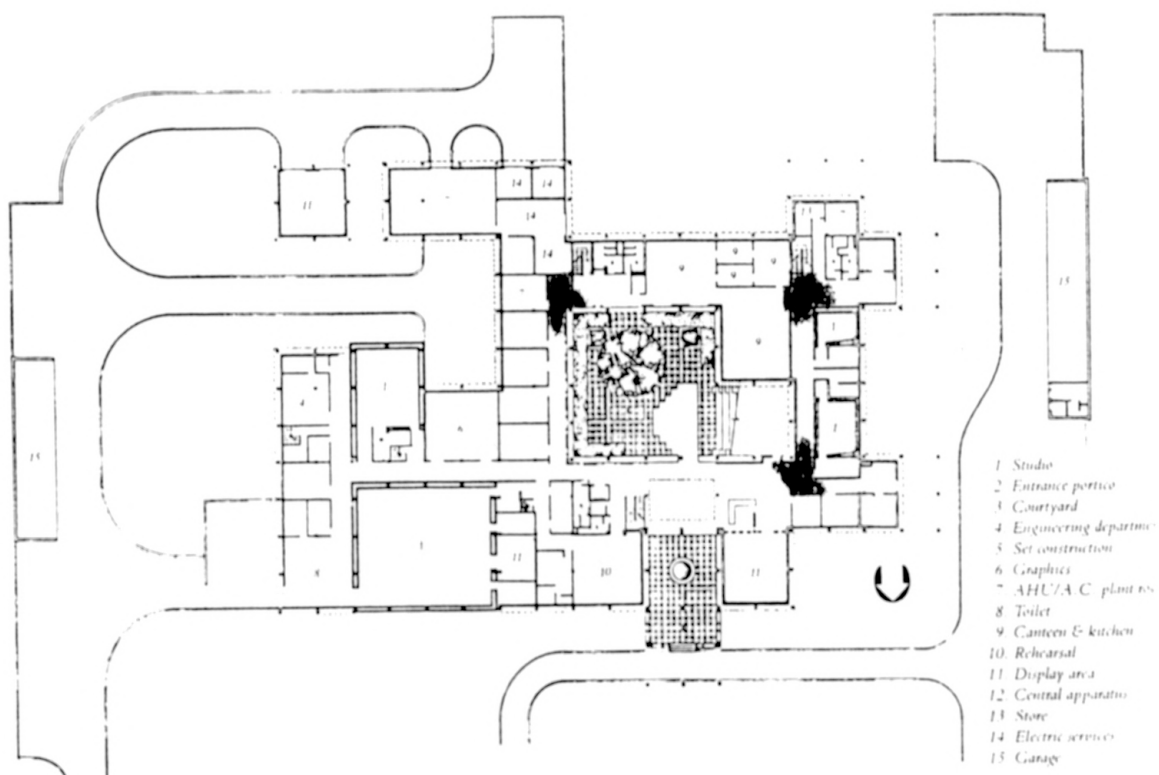
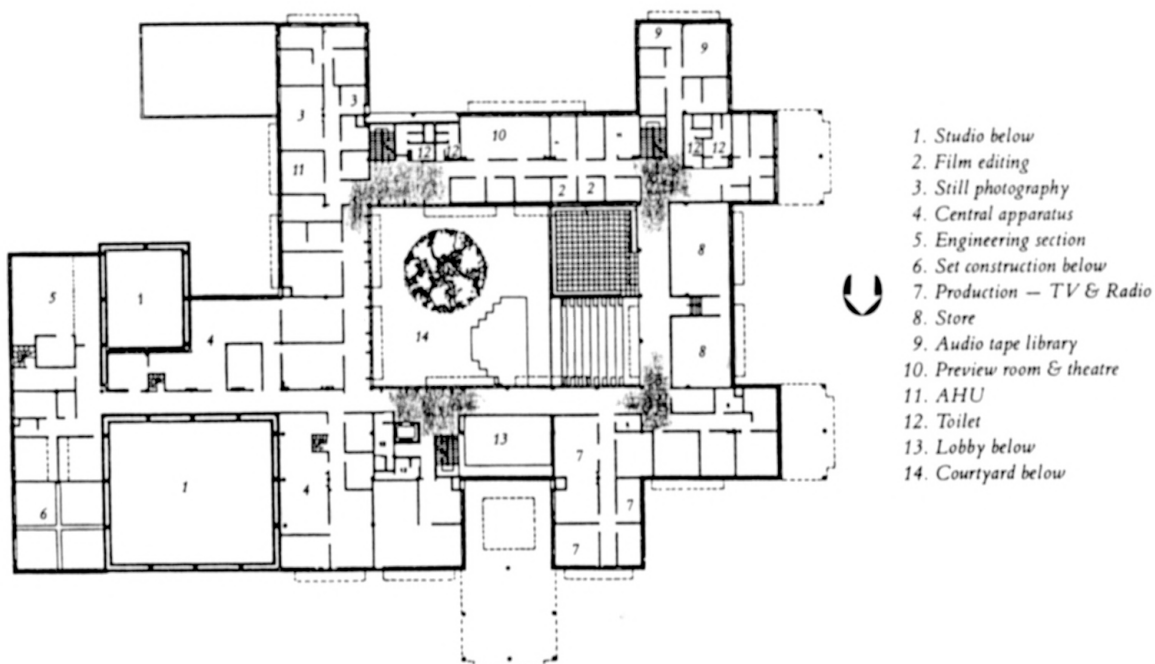


Fig. 10.17: The “pockets” on the ground floor plan.

Fig. 10.18: The “pockets” on the first floor plan.



center of the length of the pockets. Beyond these columns lie the two pockets overlooking the courtyard. Similar pockets, but smaller in length are created on the north and the south of the courtyard.

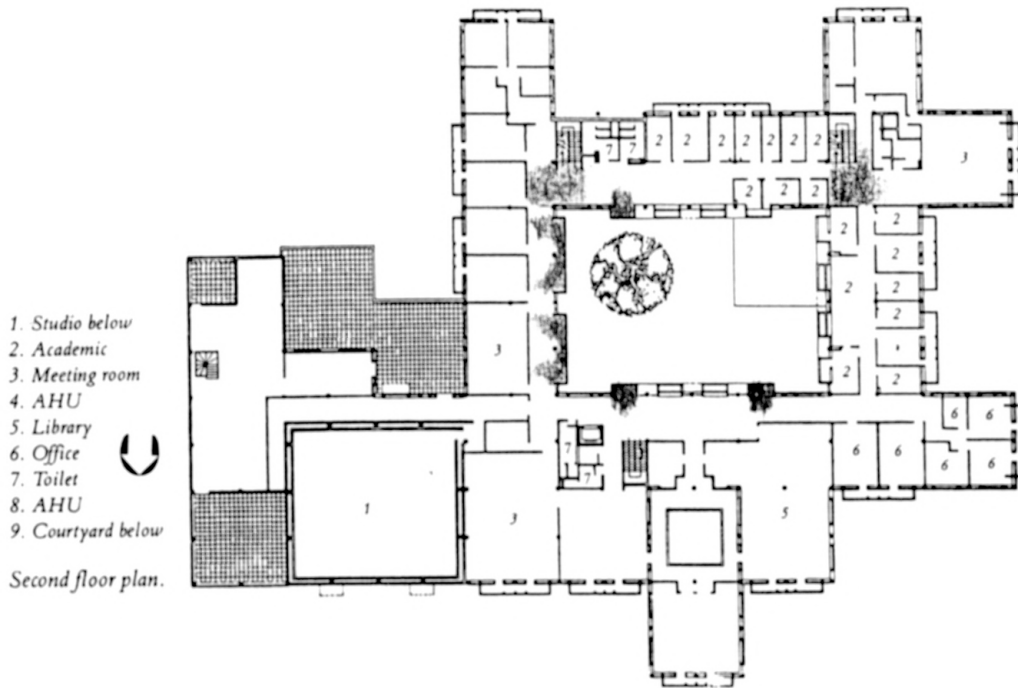


Fig. 10.19: The “pockets” along the eastern, northern, and southern corridors of the second floor.

On the uppermost floor, the corridors open intermittently onto roof terraces and balconies. These balconies are intended to be a contemporary interpretation of the traditional *chhatris*, or kiosks. The *chhatris* are traditional covered spaces on the roof, used as either roof terraces or look out points. They have been used through the ages in buildings in central and northern India. The typical structure is simply a roof resting on columns. These *chhatris* were usually symmetrical in plan using a square shape. Variations have been observed in some historical buildings. These variations are in the

form of hexagons, octagons, or rectangles formed by a sequential placement of the basic square layout.<sup>3</sup> The shape of the space in plan is more defined by the supporting columns than by the roof dome which is usually observed to be circular.

Rewal's *chhatris*, although intended otherwise, appear to be more symbolic than functional. This is because on either side of the two *chhatris*, are rectangular covered balconies which serve the same function. If the *chhatris* were isolated covered balconies without the additional balconies on either side, they could have perhaps served the function of being the main lookout points, thus qualifying as being more functional than symbolic, i.e. genuine *chhatris*. Thus, the fact that the *chhatris* serve a function which is already served by other elements in the design, and that the *chhatris* use traditional geometry and dimensions, their incorporation can be said to be more symbolic than functional.

According to Rewal, traditional northern Indian streets displayed changing vistas resulting in an element of surprise. In the CIET, such surprise elements can be seen along with the changing "vistas" on almost all floors. Due to the fact that the CIET is an isolated building and not a group of buildings which can incorporate the actual street character seen in traditional streets, the surprise elements in the CIET can be seen in the form of variations in light, view, enclosure and occasional sudden opening of the constricted corridors into large volumes. Such features can be seen on all floors. The

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<sup>3</sup> For more information, see Gaekwad, Fatehsinhrao (The Maharaja of Baroda). *The Palaces of India*. London: William Collins Sons & Co. Ltd., 1980.

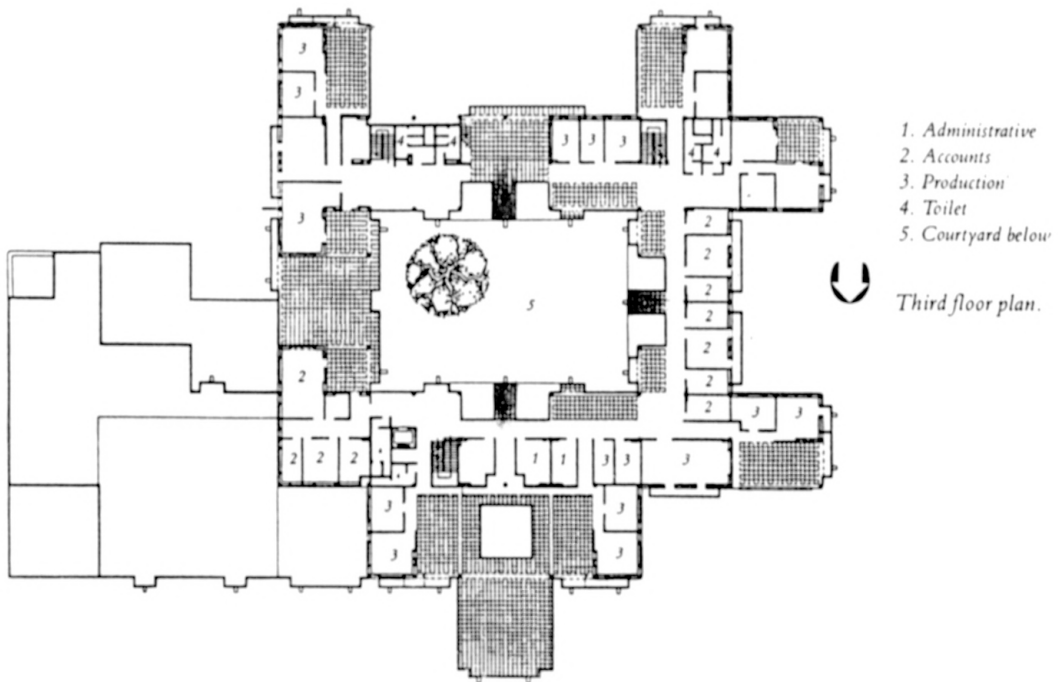


Fig. 10.20: The *chhatris* on the third floor. See the narrow projections along the center of the corridors on the North, South and the West.

Fig. 10.21: The *chhatri* on the west of the courtyard supported by a single column.



ground floor, for instance, is open to the courtyard on three sides, i.e. the north, the south and the east. But as one walks toward the west along the corridor on the south one suddenly encounters the large volume of the cafeteria on the left. Then, as one proceeds, it appears that the corridor continues beyond the cafeteria. But again, one enters into another large volume on the right, which is an extension of the cafeteria. Beyond this extension is a turn to the right almost without a hint. This is because while passing through the extension of the cafeteria (prior to reaching this turn), a visitor is visually led ahead into what is now the pocket (or the “point of rest”) which is also the landing for the staircase. The staircase is recessed and out of view as one approaches the pocket. Thus, on reaching the pocket, one encounters a sudden turn to the right leading to the corridor which falls on the west of the courtyard. This corridor on the west is dark and has very little natural light filtering in. At the end of this western corridor is another turn to the right. On turning, one encounters the bright entrance lobby. These variations in volume, direction and light seem to approximate the surprise elements and the changing vistas which Rewal seeks to incorporate.

Similar patterns can be seen on the upper floors. On the first floor, three of the four corridors around the courtyard are exposed to natural light. But on the southern corridor, the situation is similar to that on the ground floor, except that instead of opening onto a large volume, the corridor takes a slight turn into a dark portion which has rooms on either side. On the second floor, this pattern changes orientation. The dark corridor is partly on the south and partly on the west. But to accommodate for the absence of any other elements, Rewal has incorporated additional pockets described above

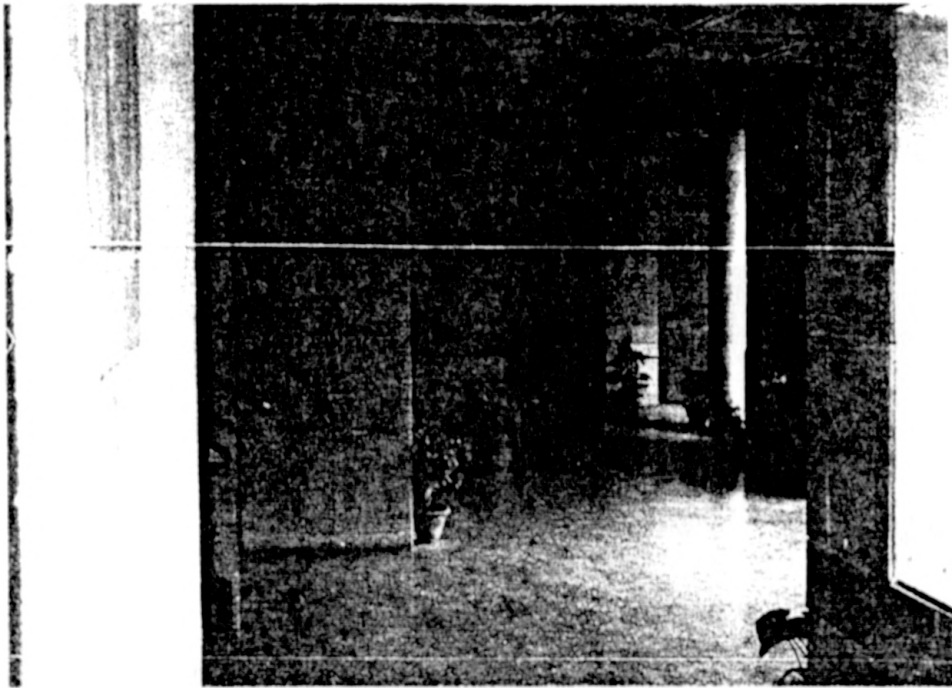


Fig. 10.22: The light variation in a corridor and the changing width of the “street”.

along the corridors. Thus the width of the “street” suddenly changes. Such changes are visible on all four corridors.

On the uppermost floor, due to the abundant open spaces, the surprise elements are not presented in the form of light variations as much as they are in the form of the contrast between covered and open spaces, and extreme variation in width due to the merger of the roof terraces on this floor. It does appear, therefore, that Rewal has attempted to incorporate an interpretation of the traditional street pattern within the corridors of the CIET.

(c) Gateways

Again, due to the fact that the CIET is an isolated building and not a cluster of buildings, it appears that Rewal has reinterpreted the form of the gateway to

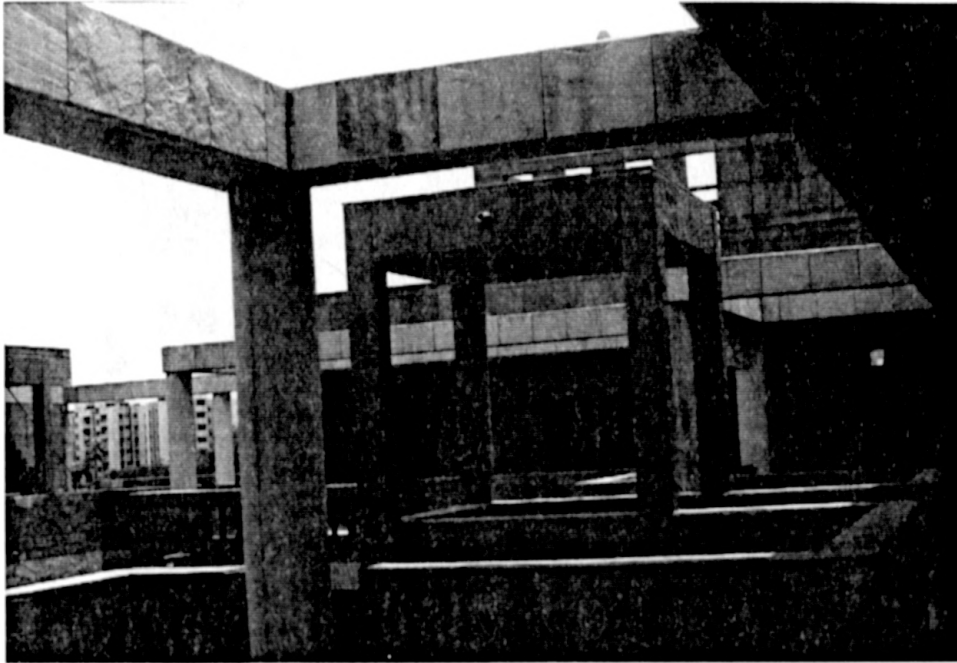


Fig. 10.23: The covered and open areas on the third floor.

provide a representation of the gateway. The entrance gate of the CIET represents such an attempt. As seen in plan, the northern side of the courtyard projects beyond the boundary which defines the main volume of the building. It is this portion which seems to have been used to create an interpretation of the gateway. Traditionally, the gateway being composed of masses of buildings, had a depth. It was not meant to be a membrane, but rather an opening in a mass which defined the beginning of the sequence of buildings beyond the gateway. In other words, it was another mass in itself, which also formed the entrance to a cluster of habitable spaces.

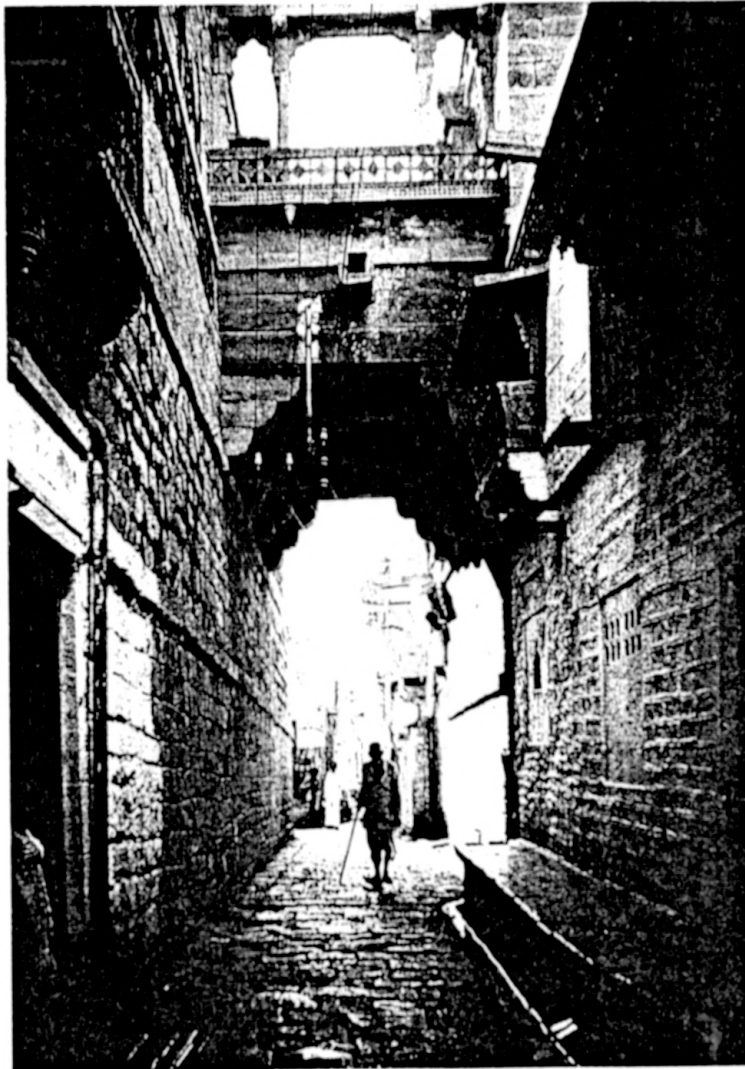


Fig. 10.24: A gateway in Jaisalmer.

Rewal has defined the gateway by using four identical elements in the shape of a vertical “T”. These four elements also form the northern boundary of the courtyard by enclosing that portion of the courtyard which projects out of the line defining the main mass of the building. Thus, there is one element each on the east and



the west of the projection, while the remaining two elements enclose the northern side of the projection. It is between these two elements on the northern side of the projection that the entrance gate of the CIET has been located.

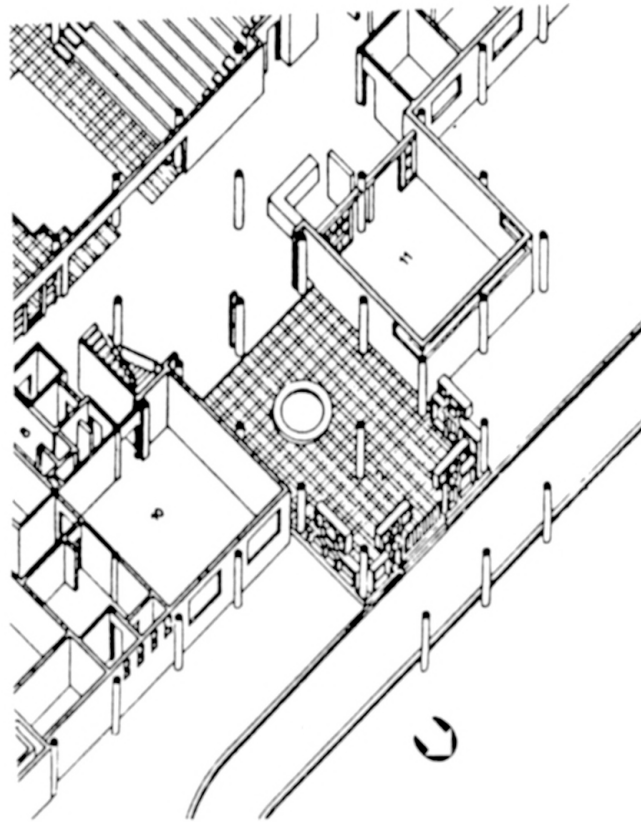


Fig. 10.25: The four “T” shaped elements enclose the northern boundary.

The two elements on either side of the gate are joined at the base of the “T” up to a height above the human eye level. The horizontal member of the “T” is located higher than the average human height. Thus, when entering, it may be said to represent the entrance through the gateway. But a logical objection would be since the elements are “T” shaped, they do not fully enclose the gateway overhead. A possible argument in response to this objection could be that since this gateway is meant to be a visual representation, a complete enclosure above might be identified as a direct

replication of the traditional type. Rewal has positioned himself against such replications. Hence, in an effort to create an abstract representation, Rewal has placed a tall slender column a little further in the courtyard, but corresponding to the exact center of the opening defined by the two "T" shapes. Thus, if one stands at a short distance before the gate along the line which connects the column to the center point of the gate, the tall slender column visually cuts through what would have been the connection overhead between the two "T" shaped elements (see fig.10.27). The resulting fissure between the horizontal elements of the two "T" shapes is thus explained, enabling the abstraction of the traditional form of the gateway to be directly communicated.

A similar situation occurs at the individual junctions of the two "T" shaped elements on the east and the west, and those located on either side of the gate shutters. Between each potential junction runs a column which supports the projecting mass overhead. But this time the columns are located such that a connection between the two elements is not possible. It is not a visual, but an actual obstruction. The two "T" shaped elements to the east and the west which help define the projecting portion of the court seem to symbolize the depth of a traditional gateway mentioned above. This is because, as one passes through the gate, the presence of the two elements on the east and the west is felt due to the light penetrating from above the elements. But the transition appears complete when one reaches the bright sunlight penetrating the court from above, just before the water pond.

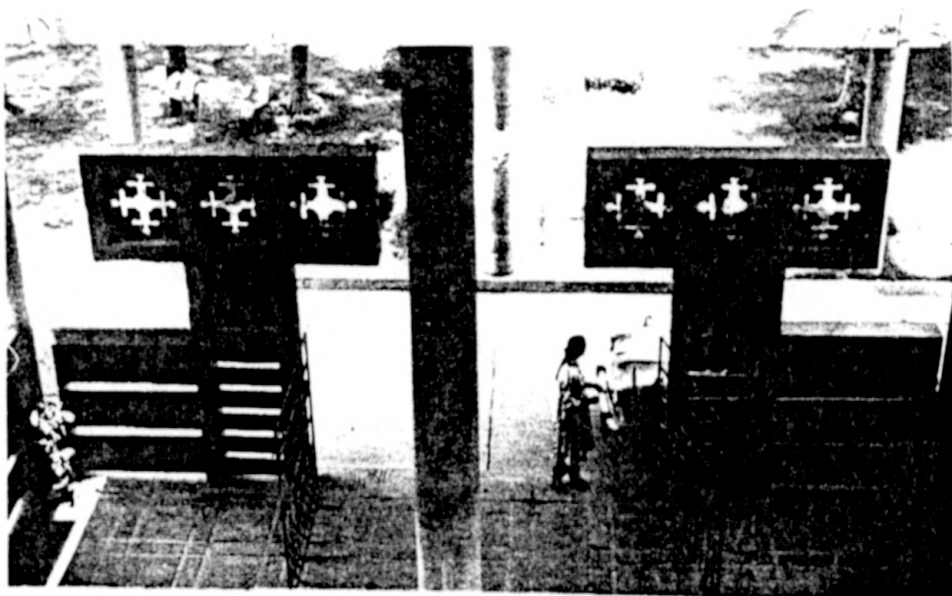
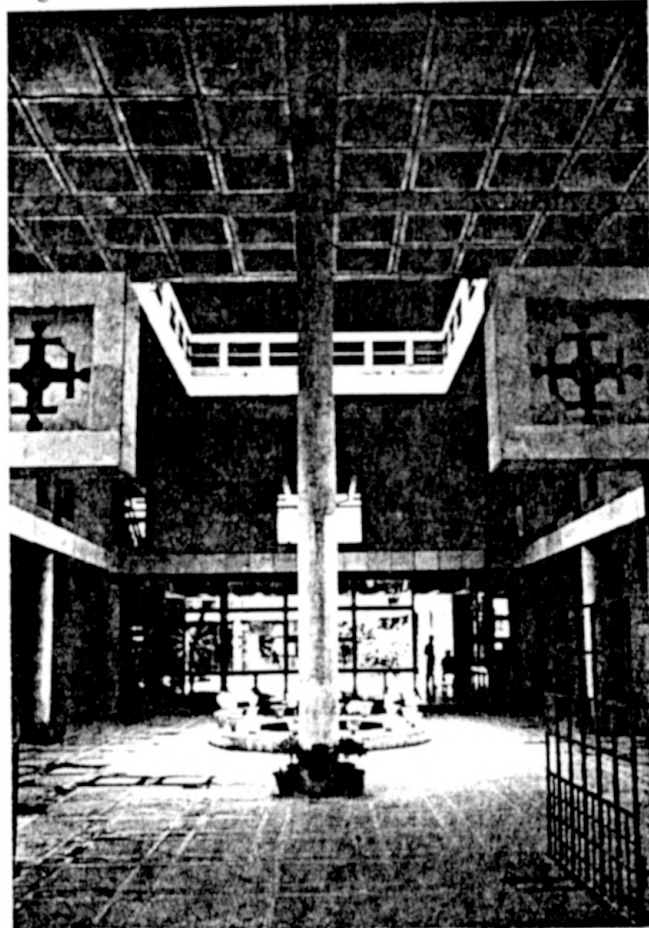


Fig. 10.26: The gateway with relation to human height.

Fig. 10.27: The slender column cutting through the gateway.



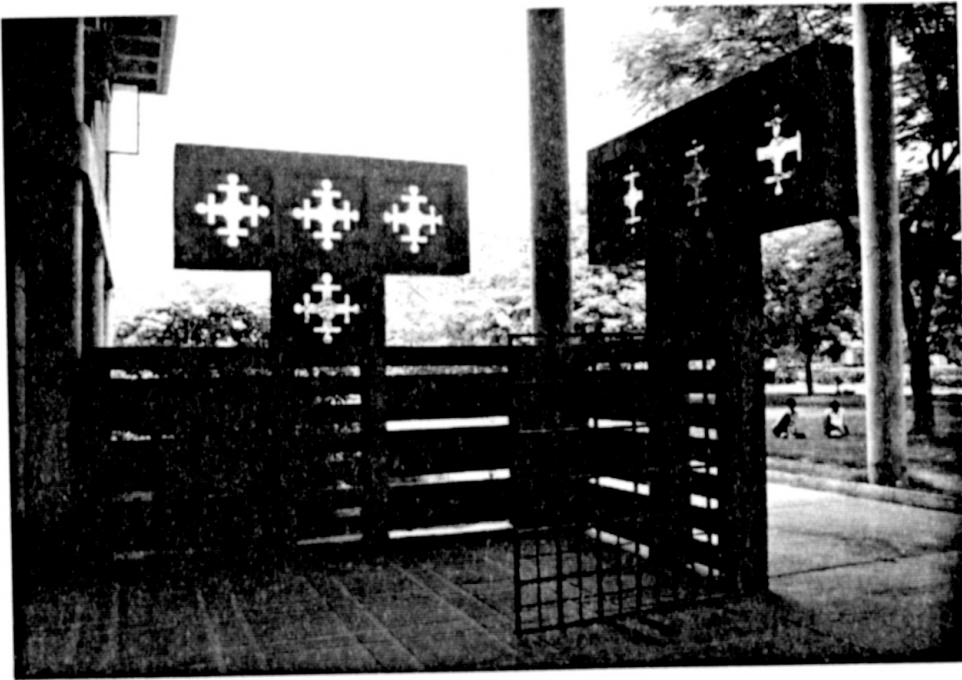


Fig. 10.28: A column creates an obstruction between the two “T” shaped elements.

There appears to be, therefore, an attempt at abstracting the traditional form of the gateway, rather than replicating it. But this abstraction is a courtyard at the physical level. A gateway, according to Rewal, also helps define territory and acts as a “punctuation mark” in an urban environment. Beyond this “punctuation mark”, traditionally, lies a whole new spatial experience. The gateway at CIET also opens up a new spatial experience. Historically, the intention of introducing the smaller courtyard is to enable this new experience to begin. In hot climates, Rewal says, the entrance into a building must be a smooth experience. There must be a transition space where one can experience a relaxed mood after leaving the hustle and bustle of the streets outside. It is

to induce this relaxed mood into a visitor to the CIET that a smaller courtyard is necessary.<sup>4</sup>

The CIET makes use of this concept. One approaches the building from the hot and sunny environment outside. The shade of the projecting mass signifies the entrance area. The courtyard is not seen from outside the gate. But as soon as one enters the enclosure, the solitary column coupled with the serene motionless water pond, the filtered sunlight from above and the silence that engulfs the space due to lack of activity, truly induces a sense of calm and coolness. The sunlight relates to the harsh light of the street outside, but inside, it appears not as harsh due to the coolness, the serenity and the option presented of walking around the filtered light rather than through it. The small proportion of the sunlight connects to the light outside, but ensures a smooth transition into the building rather than an abrupt transition which would have taken place had the filtered sunlight not been present. Essentially, the gateway therefore, not only begins a new experience, it also signifies the beginning of a new sequence of spaces, as Rewal says has traditionally been the case in the design of the gateways.

#### (d) Roof Terraces

As has been mentioned earlier, roof<sup>5</sup> terraces are an integral part of traditional Indian architecture serving as an extended living room that is used during evenings and as a bedroom at night. Besides, a terrace allows for openness around a room

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<sup>4</sup> Rewal, Raj. "The Use of Tradition in Architecture and Urban Form" in Ameen, Farooq (ed.). *Marg: A Magazine for the Arts*, Vol. 48, No. 3. Mumbai: Marg Publications, March 1997, pp.62-63. This statement

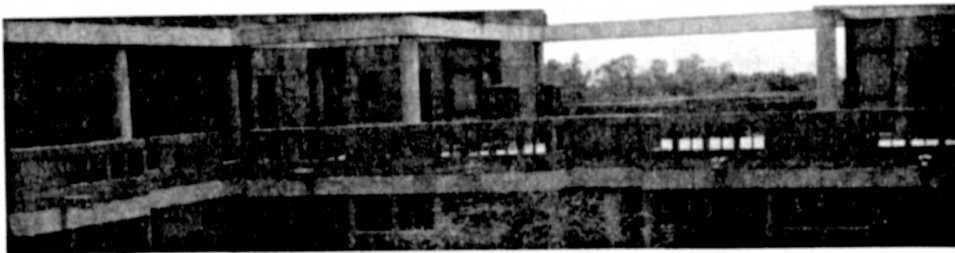


Fig. 10.29 & Fig. 10.30: The green views provided by the roof terraces.



which may have been heated during the day, thus aiding in heat dissipation. As seen in the plan of the third floor, numerous such spaces have been provided. The height achieved by the CIET in relation to its surroundings affords distant views all around. Thus, after office hours, people can come up to enjoy some cool breeze and a good refreshing view of the extensive green spaces all around.

### *Craft & Rasa*

The evidence of craftsmanship as seen in the CIET will now be discussed. Each “T” shaped element of the abstracted form of the gateway is composed of Agra

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is given with relation to a mosque designed by Rewal in Lisbon.

stone panels with a see-through crafted pattern. In addition, on the external facades of the building, there are balconies which are enclosed with crafted *jali* screens. *Jali* screens are a traditional building component used as membranes in aperture openings. The screens were usually handcrafted out of stone slabs and displayed intricate patterns. The function was to facilitate the entry of natural light and ventilation, while providing privacy inside. Both these elements are instances which display the utilization of craftsmen in the overall design. As has been mentioned before, such an approach is an attempt at inserting in a building what the modernizing forces of “hyperspecialization” took out—the “poetic and the psychic”, according to Rewal. The crafts in the CIET are products of a “transformation” in the art of the traditional craftsman achieved as a result of the use of modern cutting tools. Thus, not only is there an effort at continuing the tradition of craftsmanship in building, but the craftsmanship is also undergoing a transformation effected by the contemporary culture of the Age of Reason” in conjunction with a traditional art base. This attempt at involving craftsmen in the design is another level at which Rewal incorporates culture in his buildings.

Finally, the concept of *Rasa* gives the CIET another connection with ancient Indian culture. *Rasa* for the CIET means that the building has been “styled” not only for the context, but also for the “occasion” of learning (education). “The clients brief, the structural system, specifications, cladding materials are all fused (together) to create the right ambience and mood appropriate to the basic purpose of the building.”<sup>5</sup> The *Rasa* of the CIET aims to be “friendly and educative”<sup>6</sup>. The court, especially,

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<sup>5</sup> Cruickshank, Dan. “Rewal Rasa” in *Architectural Review*, Jan 1990, v. 187, no. 1115, p. 58.

<sup>6</sup> Ibid.

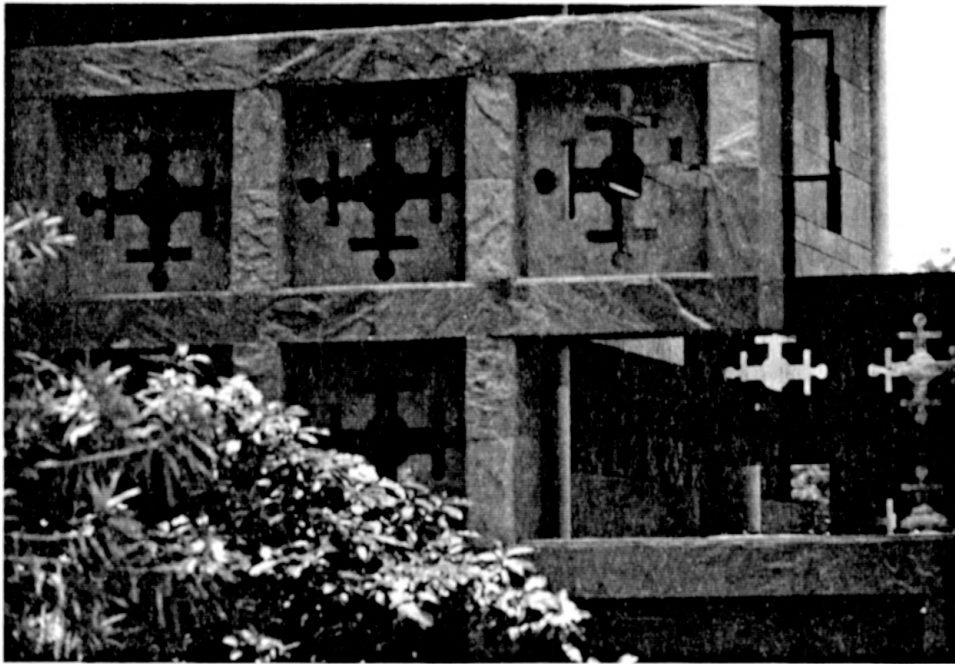
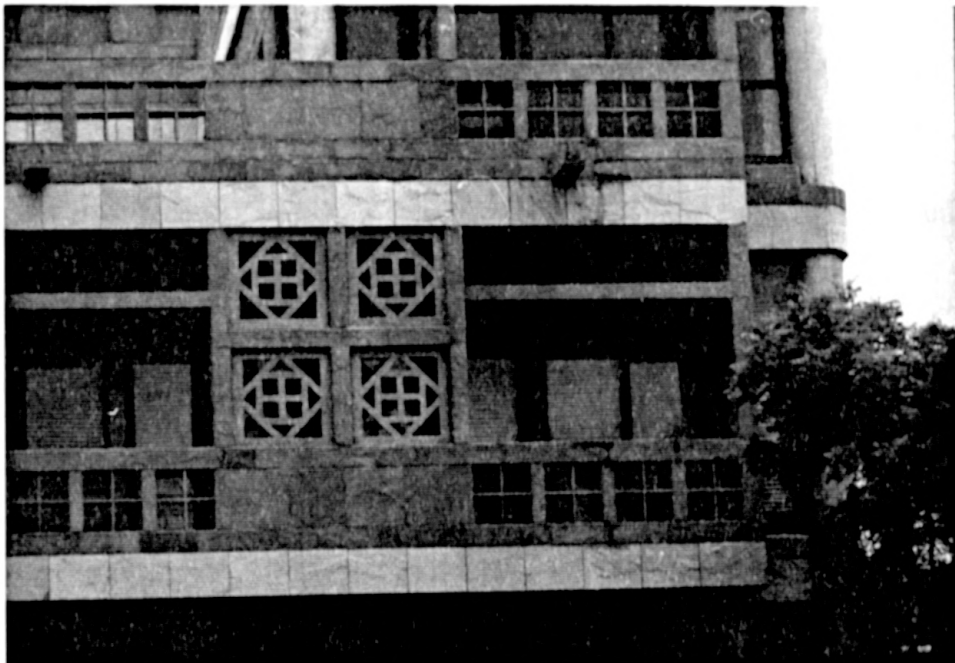


Fig. 10.31: The evidence of craftsmanship—the see through patterns in stone panels.

Fig. 10.32: The evidence of craftsmanship—the *jalis* on the balconies.





expresses this friendly nature—a space for communal interaction, lectures, performances, and so on. The colour of the building—red (along with its variations of vermilion and saffron—is traditionally associated with gaiety (friendly) and spirituality (educative). The subtleties of *Rasa* may be hard to explain in language and may have to be experienced. Even then, it may be hard to follow, since the significance and associations of the colour red occur naturally for an Indian, while this may not be so for a foreigner. But the experience of this author does confirm the feeling of the “celebration” of the occasion of learning, the lightness of the building as experienced from the court, the spiritual associations and the unified approach to design.

Thus, Rewal tries to connect to local and regional culture by attempting to continue the past in a transformative way to reflect present reality. From the above discussion on “cultural patterns”, four areas of such a connection with contemporary culture can be established.

- 1) The function of the building as a reflection of present cultural realities in the Indian context,
- 2) At the level of the transformation of the morphology of traditional built spaces as found in the northern Indian context,
- 3) At the level of a unified approach to building design, which is a traditional approach, and
- 4) Through the incorporation of the appropriate *Rasa*—another traditional cultural feature of architectural design in India.

As regards Frampton's criterion of culture, i.e. the manifestation of myth,<sup>7</sup> it appears that Rewal subscribes to incorporations of myths due to the application of the concept of *Rasa*. This incorporation may be called an Indian "myth" from Frampton's point of view. Thus, we see that the CIET also fulfils Frampton's criterion of cultural associations.

As we have seen before, Frampton conveys the need for establishing a domain within which the cultural discourse may find continued expression and not get overwhelmed by the universalizing forces. In the CIET, one may interpret this domain as protective of the "character" achieved through the collaborative efforts of the architect, contractor and craftsmen which, as Norberg-Schulz thinks, cannot be separated from the process of making.<sup>8</sup>

Also, as has been mentioned earlier, Frampton thinks that the approach of the architects should be antithetical to the typological design imposed by standardized industrial technology. The CIET uses standardized industrial technology in the form of prefabricated waffle slabs. Also, there is a standardization of the dimension of the stone cladding material. But the use of prefabricated waffle slabs in conjunction with the craftsmen and their creations, does not in anyway threaten the creation of regional identity. It is more with the intention of relating to current technology to express

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<sup>7</sup> See footnote number 16 on p. 80 of this thesis.

<sup>8</sup> Frampton, Kenneth. "Place, Production and Architecture: Towards a Critical Theory of Building." In Frampton, Kenneth. *Modern Architecture and the Critical Present*. London: Architectural Design, 1982.

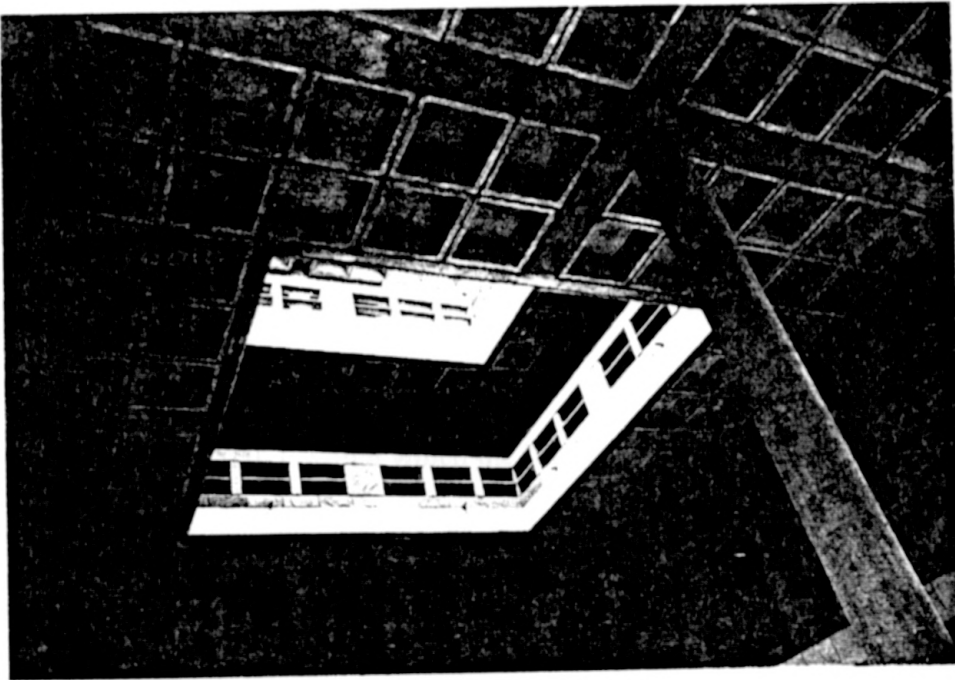


Fig. 10.33: The prefabricated waffle slabs.

contemporary realities that such prefabricated technology has been used. Thus, instead of threatening its identity, the building reinforces the intended expression. Similarly, the use of standard dimensioned stone slabs, it can be argued, does not qualify as “standardized industrial technology”. Standardized industrial products formed the basis of the International Style principles of design. The building design of the International Style was dictated by the dimensions and other characteristics of these standardized industrial products. The standardized stone panels used in the CIET do not dictate the design and form of the building. They are used for purposes other than structural. The intention behind the use of the standardized panels is to counter the climate and convey the historical and regional links of the building. The Agra stone panels, therefore, do not qualify as contributors to a typological design imposed by standardized industrial production.

Thus, the approach in the CIET cannot be said to be a result of “standardized industrial technology”. The “character” achieved is through the process of making of the building. Thus, this character, a result of the method of production and the creation of place, requires a domain for it to sustain itself. The domain in the CIET is a physical wall on three sides—the south, the west and the east. Another such domain is the mass itself which encloses the center of activity—the courtyard. Thus, we see that there is a domain around the CIET within which the “cultural discourse” of the *Rasa* takes place.

### ***Climate Response***

The climate of Delhi is categorized as hot and dry for the most part of the year. According to the information obtained from the Meteorological Society of India, the summer temperatures (April to July) lie between 25° C (77° F) and 47°C (116°F). The humidity during these months is the lowest in the year and is approximately 20% - 30%. The monsoon season follows the summer and continues up to September. The humidity during this season reaches a maximum of about 75% to 77%, but the temperatures remain high ranging between 30° C (86° F) and 35° C (95° F). The wind blows from the west and the northwestern directions during these months as well as during the summer (summer winds are very low in speed), but wind from other directions is not uncommon. The winter sets in from mid-November and continues up to the end of February or sometimes even until mid-March. The humidity lies between 40% to 45% and the temperatures range between 7°C (45° F) and 21° C (70° F). Thirty three percent of the

winds in these months blow from the west and the remaining winds blow proportionately from all other directions.

The months of October and part of November are transitory between the monsoon and the winter. Temperatures during these months are high during the day and low at night. The humidity during these two months ranges from 31% to 54%. Thus, the hot and dry condition, it appears, lasts for the most of the year. In a given year there may be some dust storms during the summer months. Except for the period between the end of June and the beginning of July, the temperatures during the night throughout the year are lower than those during the day. These conditions are important in the design of the building.

To analyze the CIET, the variables offered by Rapoport used in the climate analysis of the IUCAA will be used. The following are the variables identified by Rapoport.<sup>9</sup>

- 1) Temperature – dry
- 2) Humidity – low
- 3) Winds – hot
- 4) Rain
- 5) Radiation and light.

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<sup>9</sup> Rapoport, Amos. *House Form and Culture*. Englewood Cliffs, N. J.: Prentice-Hall, Inc. 1969.

As regards the hot and dry climates, Rapoport says that heat should be delayed in reaching the interior. This can be achieved through the use of certain materials like mud and stone. A compact geometry with maximum volume and minimum surface area also helps. The interiors should be kept cool and dark through the use of minimum window openings. Many times, clusters of buildings close to each other prevent the sun from reaching the walls of some buildings, thus, keeping them cool. But a courtyard configuration has been seen to be very effective too. There may be several courtyards of varying sizes used together to cool and channel wind as required. The courtyard, according to Rapoport, also protects from sandstorms.

One strategy described by Rapoport speaks of the use of two courtyards, one shady and the other open to the sky. The court which is not shaded, becomes hot making the air rise. The negative pressure created is then occupied by air which enters through the shady court. This air is cooled down in the shady court before it reaches the open court, thus helping the open court and its surrounding areas to cool down. In either of the courts, if some trees and a water body are introduced, it helps create a cooler micro-climate and introduces some humidity in the air. Such use of trees and water has soothing psychological effects too. According to Rapoport, if the building mass around a court is high and some openings are provided at a higher level, then cross ventilation can be achieved. But in dry climates, says Rapoport, wind movement, except for ventilation purposes, should be discouraged as compared to a hot and humid climate in which wind movement is encouraged.

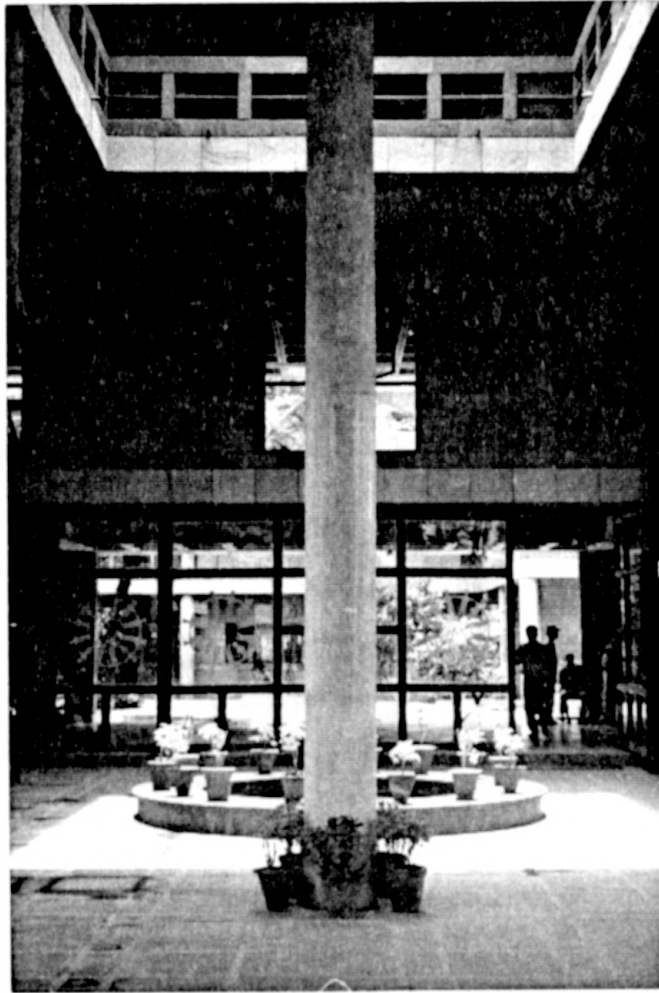


Fig. 10.34: The narrow court with its shaded areas.

As seen in the chapter on Rewal's ideology, Rewal sees climate as a major determinant of building form. Like Correa, he prefers to use traditional solutions, since he thinks they have been time tested. Thus, we have the courtyard configuration in the CIET. There is also a smaller courtyard on the northern side which, although, open to sky, is narrow and parts of it are shaded by surrounding projecting masses above. On the north and south of this smaller court, are two large shaded areas achieved by the projecting mass which defines the entrance to the building and the entrance lobby. The

larger court is paved all over and is completely open to sky. Thus, due to the lower night temperatures in Delhi, cool air will settle in this courtyard during the night.

As the sun rises in the sky, the cool air in the court will get heated. By the time the sun is overhead in the afternoon, the air in the court will heat up and start rising. This will enable air from the entrance opening to move into the smaller shaded court. The air entering the smaller court will already have a lower temperature due to the large garden on the north of the building before it reaches the court. The shade and the water

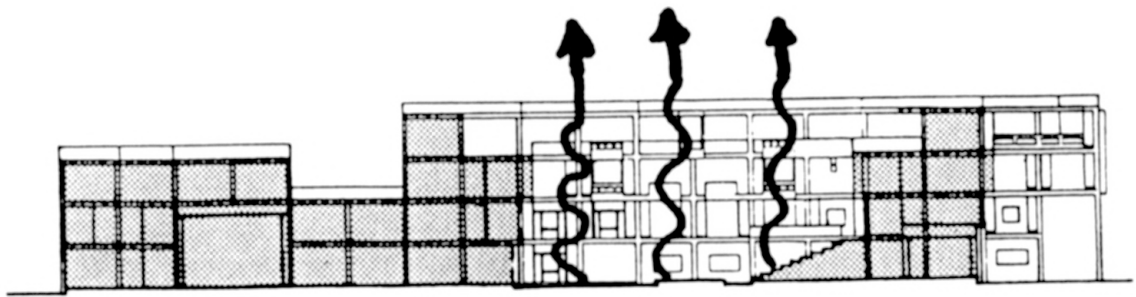


Fig. 10.35: The heated air rises in the afternoon.

body in the smaller court will further lower the temperature of the air before it goes on into the larger court. The air will also enter from the surrounding rooms through the windows. Besides, it can be inferred that due to the extensive forest cover on the south, the east and the west, the air which enters the court through these windows, is cooler than what it would have been had there been no forest cover. Thus, the surrounding mass will get ventilated by some relatively cool air movement.

It must also be noted that the building is designed around a pre-existing tree of a fairly large size which shades a substantial portion of the court. Several other



trees on the periphery of the court are also visible today. This seems to be a later addition. These trees and their shade also contribute to the cooling effect. Besides, as has been mentioned in the description of the CIET, the water body in the smaller court has soothing psychological effects after entering from the heat outside. The trees in the larger court will have a similar effect, as has been mentioned by Rapoport. Rewal, in his project of the Lisbon Ismaili Cultural Centre, Lisbon, has used lotus plants in a similar smaller courtyard. It appears that the water body in the CIET may have been created for the same purpose. During this author's visit, there were pots with plants in them placed on the periphery of the water body. If the original intention was to have plants in the water body, it appears to be a mystery as to why the plants were not introduced if they

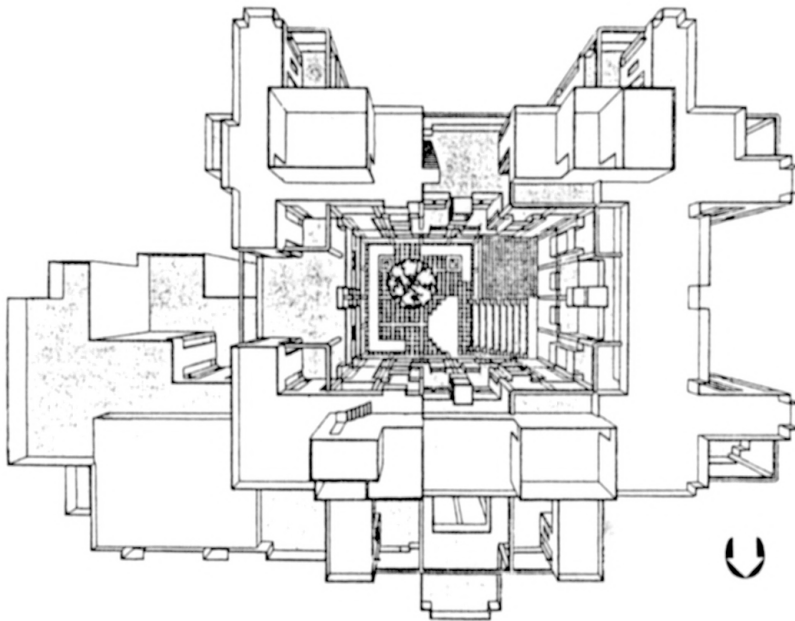


Fig. 10.36: The tree in the courtyard.

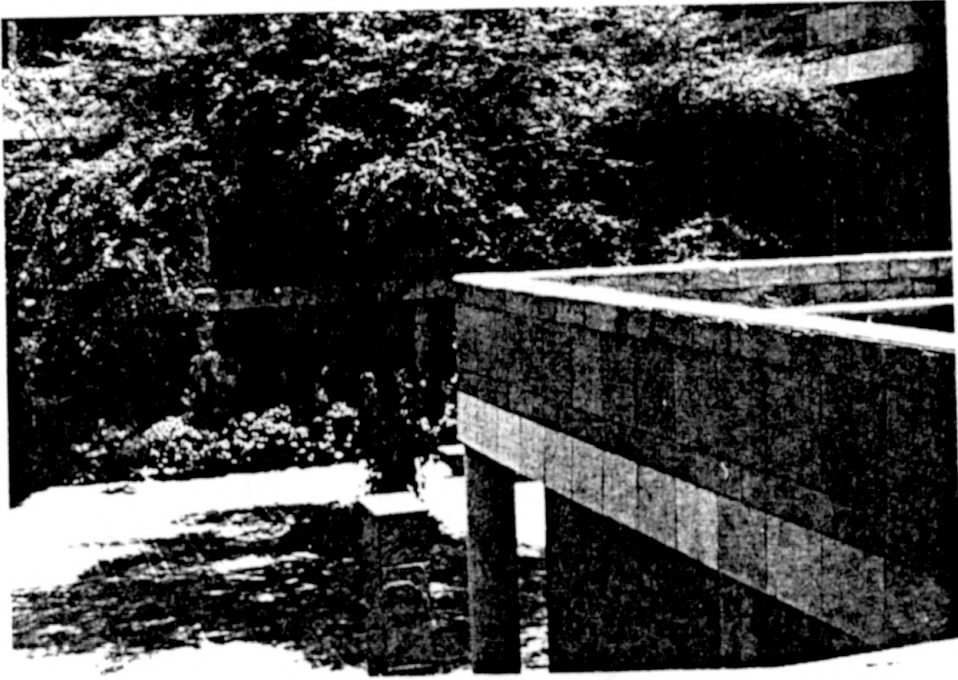


Fig. 10.37: Vegetation in the courtyard.

aid in further creating a cool and soothing ambience.

Also, as we know, the uppermost floor has the least built mass. The mass is located on the four corners of the building leaving a slot between them. This enables ventilation through a suction (or Venturi) effect within almost calm wind conditions. Thus the strategy so far, has been consistent with what Rapoport has observed in traditional built forms.

As regards thermal transfer, Rapoport says that a massive wall in a hot-arid climate helps delay heat transfer to the inside. The walls of the CIET are composed of brick in-fill clad with stone on the outside. These two materials together aid in delaying the heat transfer inside the building.

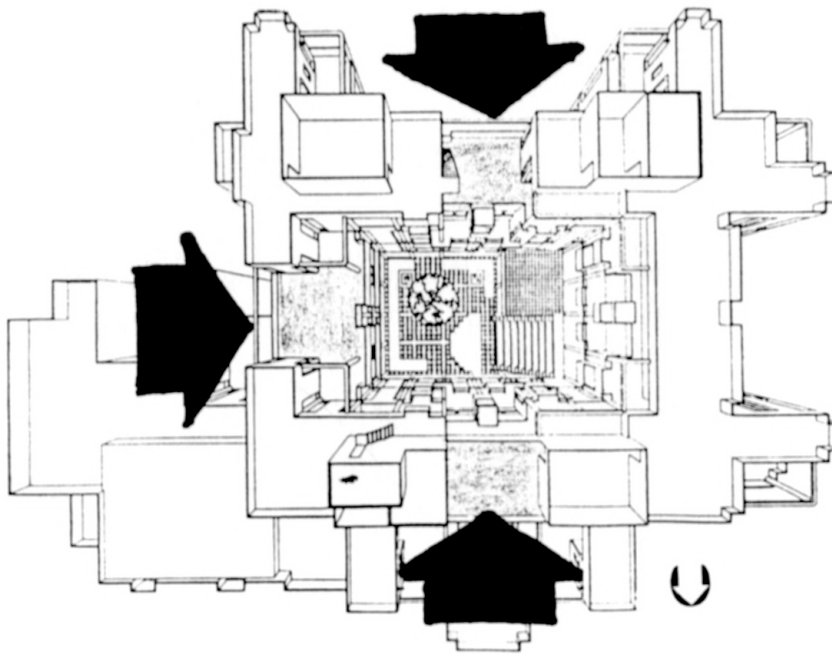


Fig. 10.38: Air enters from the slots on the sides of the third floor.

The author's visit to the CIET enabled him to see some of the interior spaces in the rooms. The dark floor tiles, and few openings in some rooms kept spaces dark and cool. Traditional materials which remain cool when in shade, like Kotah stone, Agra stone, and so on, are used on the floors in almost all the shaded spaces helping keep the temperature low. The dark spaces to maintain cool interiors is a strategy which appears in Rapoport's analysis of traditional house forms.

The rooms around the courtyard are placed along the corridors. The corridors are shaded overhead and by the small trees all around. Besides, there are deep shading elements at certain spots along the corridors at the upper level which act as fins.

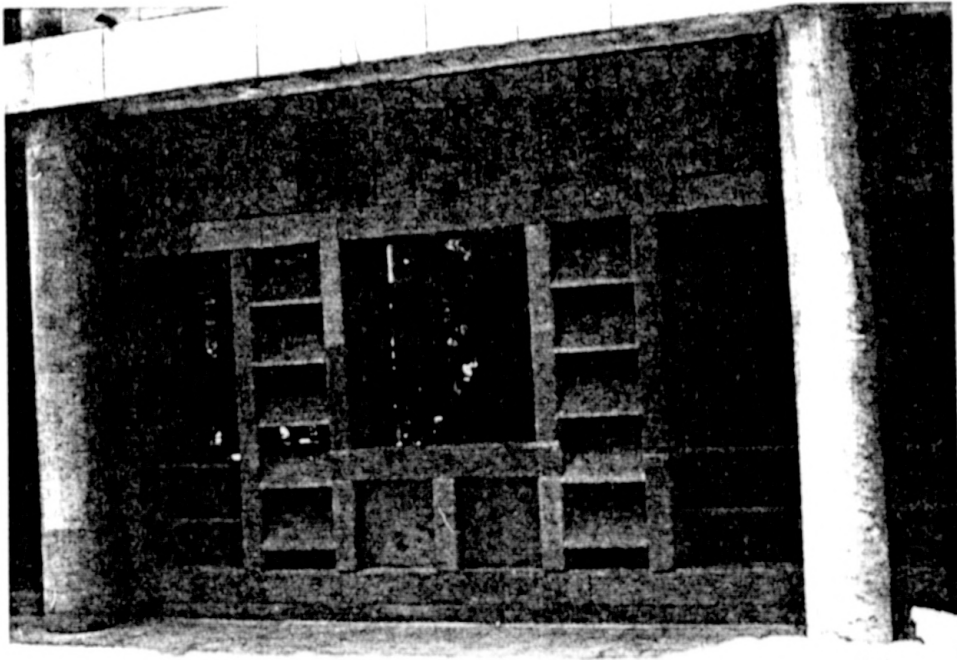


Fig. 10.39: Shading devices along the corridors.

All these factors lower the temperature in the corridors keeping the rooms cool. If the sun penetrates into the mass surrounding the court, it will reach the corridors first and not the rooms. The corridors are deep and so the likelihood of the sun reaching the rooms beyond is minimal. Thus, a clear effort is made to keep the rooms as cool as possible by natural means.

The sides of the building which are exposed to the direct rays of the sun have deep balconies and narrow recessed windows. The deep balconies prevent the sun from reaching the wall of the rooms which open onto the balconies. Thus, the glass faces of the windows which open onto the balconies are always in shade. Windows which do not open onto balconies are recessed and care seems to have been taken to place windows in areas where the sun is not likely to be incident directly. Also, some balconies are

enclosed with *jali* screens. These screens, to a certain extent, prevent the sun from entering the enclosure of the balcony.



Fig. 10.40: The deep balconies, the *jalis*, and the narrow recessed windows on the sides of the balconies.

Thus, it can be seen that there is an effective use of design elements to create comfortable conditions in the building. Rapoport's variables of temperature, humidity and wind control have been discussed so far. As has been mentioned in the climatological analysis of IUCAA, Rapoport prefers to deal with temperature, wind and humidity as one entity when discussing design strategies since they are interrelated. The next variable put forth by Rapoport, is that of rain. This variable has been discussed with relation to construction materials and technology in pre-industrial society to effectively keep rain out. The advent of "modern" technology seems to have solved the problem of the choice of material to be used to keep rain out. The CIET, as has been mentioned

earlier, uses impermeable materials like steel reinforced cement concrete to keep rain out. Rewal has provided water spouts at various locations on every flat terrace to drain of rain water. The problem of low humidity does not arise during the monsoons in Delhi, since the humidity reaches a maximum of about 77% which may not be very uncomfortable. The rain during these months lowers the temperatures to a maximum of 35°C which is still considered hot. According to Rapoport, if the humidity is on the higher side along with high temperatures, then the only thing to be done is to let breeze circulate as much as possible. The perspiration of the human body during high humidity conditions can be used to cool the body temperature if wind is allowed to circulate.

The wind in Delhi during the monsoons approaches mainly from the west and the northwestern directions, but is very low in speed. Wind also approaches from all other directions. The rooms in the CIET, in many areas, face the corridor on the inside and the openness outside. Effective cross ventilation can be achieved in such a layout. But since the speed of the winds is low (between 6 kmph and 23 kmph) the effectiveness of such ventilation maybe low. Also, a humidity of 77% may not be enough to enable the human body under normal work conditions, to sweat profusely. Thus, this strategy may not be very effective. There does not seem to be any specific attempt to use the winds from the predominant directions of the west and the northwest to enhance circulation or wind speeds. Thus, it appears that the CIET relies only on the lowering of temperatures effected by the rain during the monsoon season, to maintain comfort conditions.

Finally, Rapoport speaks of the issue of the radiation of light and the glare associated with it in hot and dry climates. In hot areas, the abundance of light creates the problem of glare. The strategies, according to Rapoport, are to recess windows, to create wide overhangs, to reduce the size of the openings and the use of dark materials. Rewal has incorporated almost all these strategies. The windows are recessed. But whether their recess is substantial enough to accommodate for their height is doubtful. The windows are divided into three parts and seem to stretch from the floor to the ceiling. Although most of the windows seem to have been placed such that direct sun is not incident upon them, the issue of glare remains. From outside the building, one can see venetian blinds on most of the windows. It appears, therefore, that the problem of glare remains in the CIET.

As regards the problem of radiation in hot areas, Rapoport says that ground radiation in hot areas is always a problem. To prevent this radiation, windows are placed high. Also, if there is vegetative cover outside, the problem of radiation is effectively solved. The CIET has vegetative cover on all sides in the immediate vicinity. On some sides, the vegetative cover extends for miles. Therefore, there does not seem to be the problem of radiation in the building.

Thus, the CIET seems to fulfil almost all of Rapoport's variables for architectural response to climate, except that of an effective design for the monsoons. The building, as we have seen, has used climate as a major determinant of its form. The courtyard layout, the corridors, the deep balconies, the *jalis*, trees, water body, recessed



Fig. 10.41 & Fig. 10.42: The vegetative cover all around.





windows, and so on, provide adequate evidence that the CIET fulfils the “climate design” requirements of the *Revised Taxonomy*.

### *Iconography*

As we have seen before, the dictionary defines “iconography” as the illustration of a subject through drawing and figures. In the CIET, there are no elements used only for the purpose of the illustration of abstract concepts or ideas as has been done in the IUCAA by Correa. But there are certain elements which seem to serve as illustrations of subjects while at the same time being functional.

The products of craftsmanship illustrate the unified approach to design in an effort to reintroduce in today’s buildings the “poetic and the psychic”. The craftsmanship also displays its contribution to the *Rasa* of the CIET. But the broad implication of this alludes to the unity between the arts, science and spirituality. Perhaps the pattern in the stone slabs at the entrance gates displays a spiritual connection, but this has not been specifically mentioned in any of the literature available on the CIET. But the relation between art and science seems evident, the science being present in the form of the technology used in the craftsmanship. Another instance of the use of craftsmanship is in the *jalīs* enclosing the balconies on the exterior. These *jalīs* are representative not just of the craftsmanship, but also of the ancient principle of *jalīs*—to see without being seen, as also for ventilation purposes. Both the instances demonstrate a connection to the past.

But in the case of the *jalis*, this connection seems to be secondary as the primary intention seems to be the function of the *jali* as it was used centuries ago.

The third instance of the use of iconography in the CIET is the *chhatris* on the terrace of the building. As has been mentioned earlier in this chapter, the use of these elements seems to be more demonstrative than functional. But the fact that there is a function associated with it, differentiates it from the icons used in Correa's IUCAA, some of which are used only for the purpose of illustration without any other function associated with them. The *chhatris* seem to illustrate a contemporary expression of an architectural element of the past, besides functioning as balconies.

Frampton's definition of iconography, as we have seen earlier, speaks of a connection with the world culture. The exposed structure and the use of steel reinforced cement concrete connects the CIET to the world culture in terms of the principles of architectural modernism and universal technology. Rewal has alluded to this connection in an interview given to this author.<sup>10</sup>

### *Contextuality*

The CIET is now examined from the points of view of contextuality within the built fabric and also within the topography of the site. The building displays a contextuality in terms of function within the campus of the National Centre for

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<sup>10</sup> Said in a personal interview given by Mr. Raj Rewal to this researcher on June 25, 1997 in his New Delhi office.

Educational Research and Technology (NCERT) in which all the buildings built so far are related to the advancement of development of educational tools for children. Despite the fact that the buildings on the campus serve the same function, there does not appear to be a uniformity of architectural vocabulary. Various architects are invited to design individual buildings within the campus leading to a personal expression rather than a contextual response. Perhaps the only feature common to all buildings is the common height.

In terms of topography, the site in the entire campus is flat and even. There is, therefore, no attempt at topographical contextuality in terms of building mass. But the campus of NCERT is located next to a protected forest area which adjoins the CIET. Rewal's experience as a theater scenery designer in London earlier in his career, has given the CIET a contextuality in terms of framed views on at least two sides of the building—the south and the east. The framed views are at the terrace level. One view on the southern side, rising in the distance, is of the historic tower monument Qutub Minar built during the Moghul era. This view can be seen from not just the terraces on the southern side, but also from the corridor across the courtyard on the northern side. The “frame” is created between the two masses on the southeastern and the southwestern sides, and is enclosed on the top by a beam of exposed concrete which seems to perform just the function of completing this frame and does not carry any load. Thus, the view one gets within this enclosure is that of a vast expanse of green forest cover, beyond which, in the distance is the solitary Qutub Minar. No other building is seen in this framed picture.

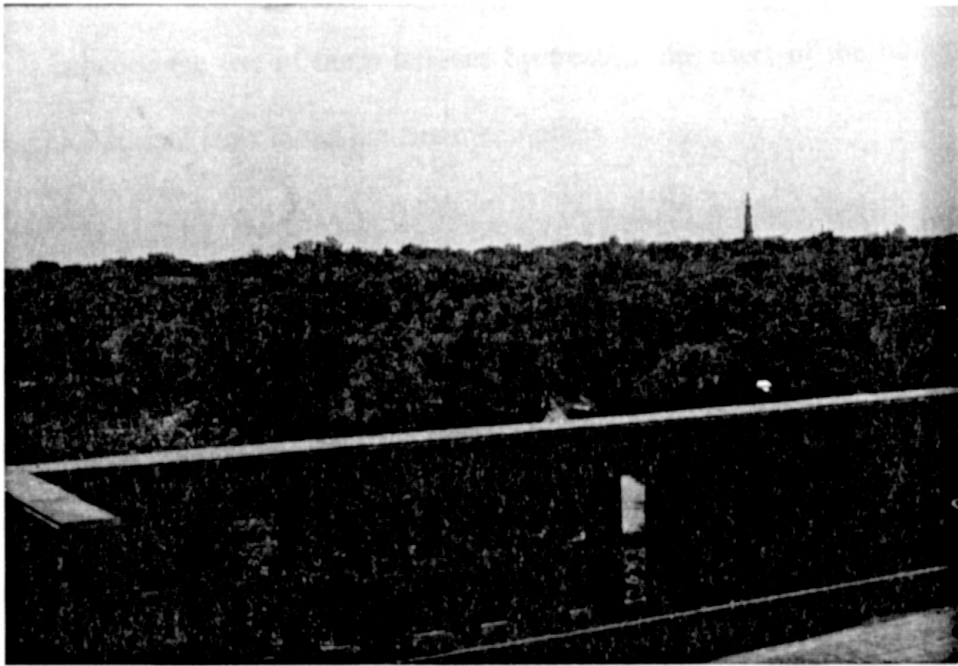
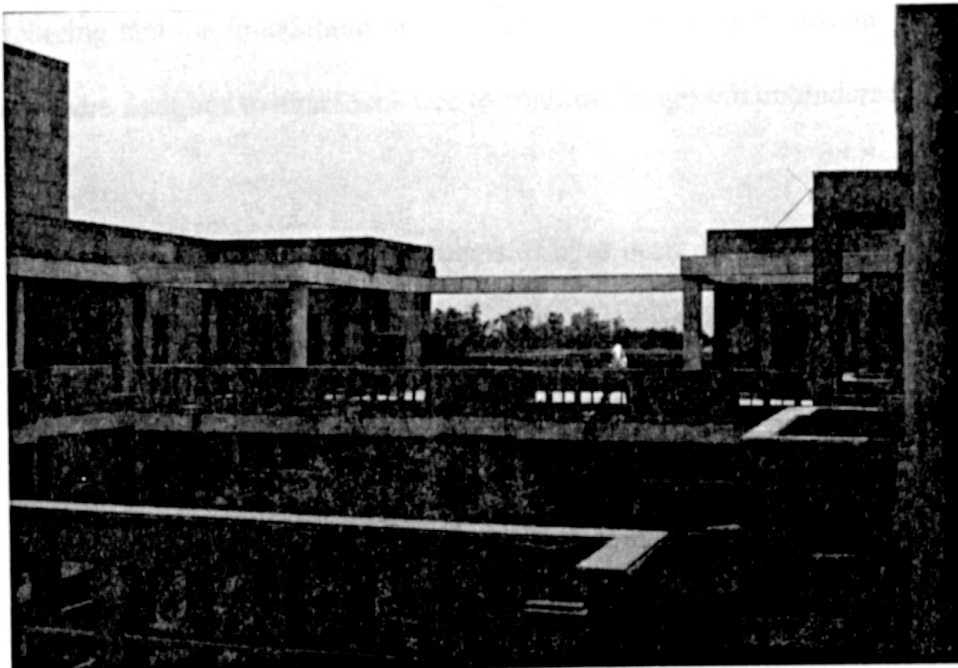


Fig. 10.43: The historic Qutub Minar in the distance as seen from south of the CIET.

Fig. 10.44: A “framed” view on the terrace floor.



On the eastern side, a similar view of a vast expanse of green cover is seen, but there are some multistoried buildings visible in some pockets. But both the views enhance the use of these terraces by treating the users of the building to a lush green picturesque view in the hot summer months.

Also, as we know already, the entire layout of the CIET is designed around a pre-existing tree. The configuration of the courtyard and the internal elements within pay a certain respect to the tree. The stage of the amphitheater uses the tree as a part of its backdrop making it and the shadows cast by it on the building mass an eye catching feature for those seated in audience. The portion of the cafeteria which projects into the courtyard is designed such that those in the cafeteria can view the tree outside. Also, the fact that the tree continues to grow unhindered, shows that its roots were not disturbed during construction and even after the construction, it receives its nutrition displaying that the foundations and the paving in the tree's immediate vicinity inside the court were designed to enable the tree to continue its growth unhindered.

Thus, the building seems to have been designed within the context of its surroundings and its pre-existing conditions, making it fulfil the criterion of contextuality.

The CIET, it appears, does not fully express the “ontological” structural tectonics of the material of steel reinforced cement concrete (RCC) as defined by Frampton. As has been mentioned earlier in the chapter on the analysis of the IUCAA, Frampton expects the expression of tectonics in reinforced concrete to be of an “ontological” nature, displaying the profile of the bending characteristics associated with a structural member. But the intention of Frampton’s proposal is to discourage the attempt to hide the structure of a building. The form and representation should be true to what is seen in terms of durability and transfer of forces. From this point of view, it appears that Rewal has intentionally left the structure exposed to display the form and representation of the process of transfer of loads in the CIET.

This intention is visible not just in the frame of the structure, but also in the floors which are made of prefabricated waffle slabs. There is no false ceiling below the waffle slabs, and the electrical conduits and water supply pipes are hidden within the structure. Also, since the building relies completely on bioclimatic design, there are no air conditioning ducts visible below the slabs. The slabs are displayed in all their truth without even paint covering the concrete. The exposed structure—beams, columns and slabs—is true to the function of the structure and no effort is made to hide or create a misleading expression of the structure of the building. From this point of view, the CIET seems to fulfil Frampton’s objective despite the fact that it does not display the bending characteristics of each member.



Fig. 10.45: The exposed structure of the CIET.

But the fact that stone cladding is used to cover the in-fill may violate this criterion of Frampton. An argument against this observation could be that the stone slabs are used not with the intention of creating a representational facade, but with the intention of functionality. The use of brick as in-fill may prove to be inexpensive, not just in terms of the cost of the material, but also in terms of workmanship and time, as compared to using stone as in-fill. Also, the use of stone as in-fill may necessitate an increase in the amount of steel to be used in the structural members, thus increasing the overall cost of the building substantially. Hence the use of the brick in-fill seems to be justified from the point of view of cost and time. But brick, by itself, in a thin wall section, may not be effective enough to counter the harsh climate of Delhi, at least not for a long time. One may argue that a thick wall section of wire cut and strengthened brick may suffice to

counter the harsh climate of Delhi for a long period of time. But such a wall section will increase not only the weight of the wall, thus necessitating the use of an increased amount of steel, but also the dimension of the structural member carrying the wall, adding to the use of steel, due to its now revised section. It is with this intention of durability and cost that Rewal has used the sandstone to clad the brick walls. The selection of Agra stone and Dholpur stones specifically, is due to their abundant availability in the region and due to the historical significance associated with them, as also with their inherent qualities of texture and colour.

Other instances of truth in tectonics can be seen in the *jalīs*, the balusters of the balconies, the water spouts which project out some roof terraces to avoid water collection during rains, gutter covers in the courtyard, benches on some roof terraces, to name just a few instances. All these elements are made out of slabs of Agra stone. The *jalīs*, as has been mentioned earlier, are crafted out of Agra stone slabs. The water spouts, are made of an assembly of narrow rectangular pieces of the stone slabs (see figure 10.48). The balusters under the railing of balconies around the courtyard and on the outer facades of the building are made of Agra stone slabs embedded in the vertical supports on either sides. Sometimes, there are vertical elements resting on the slab as can be seen in the image below. The gutter covers in the courtyard are indeed ingenious. Holes have simply been punched in a slab which is placed on a drain channel. So also are the benches, simple placement of long slabs on vertical supports. The truth in tectonics in all these examples is evident, displaying the overall approach of the architect to tectonics. Thus, Frampton's criterion of "Architectonics" is fulfilled by the CIET.



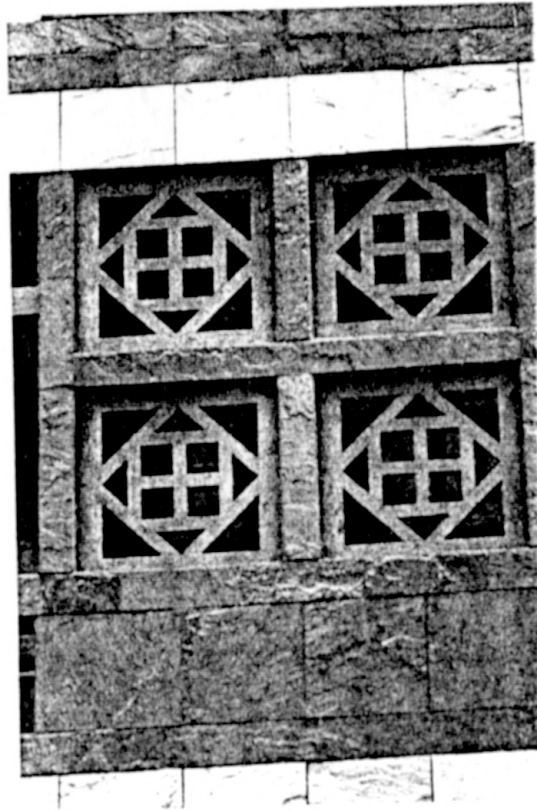
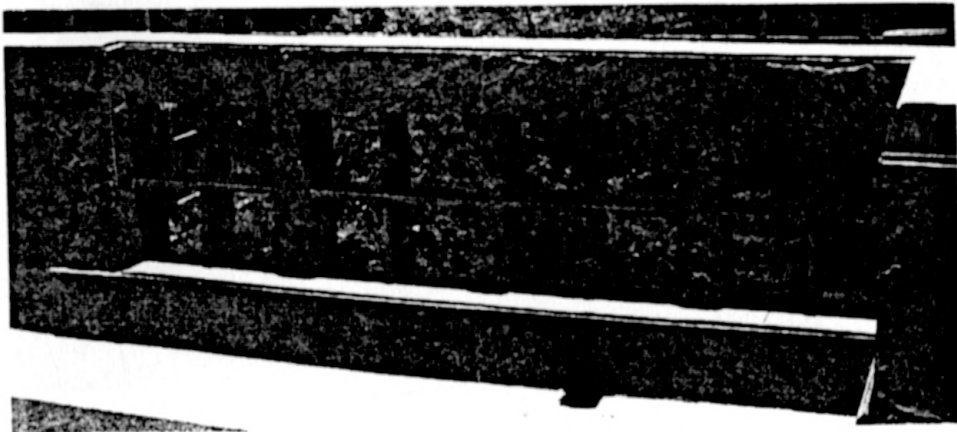


Fig. 10.46: Architectonics—the *jalis* on the face of the CIET.

Fig. 10.47: Architectonics—the balusters under balcony railings.



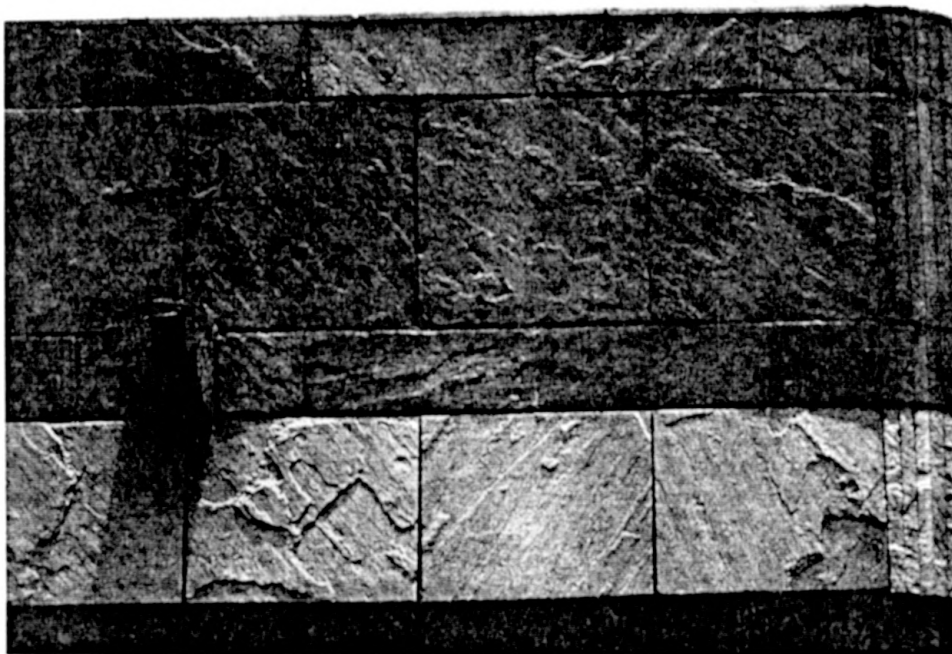


Fig. 10.48: Architectonics—water spouts draining terraces.

Fig. 10.49: Architectonics—a gutter cover in the courtyard.

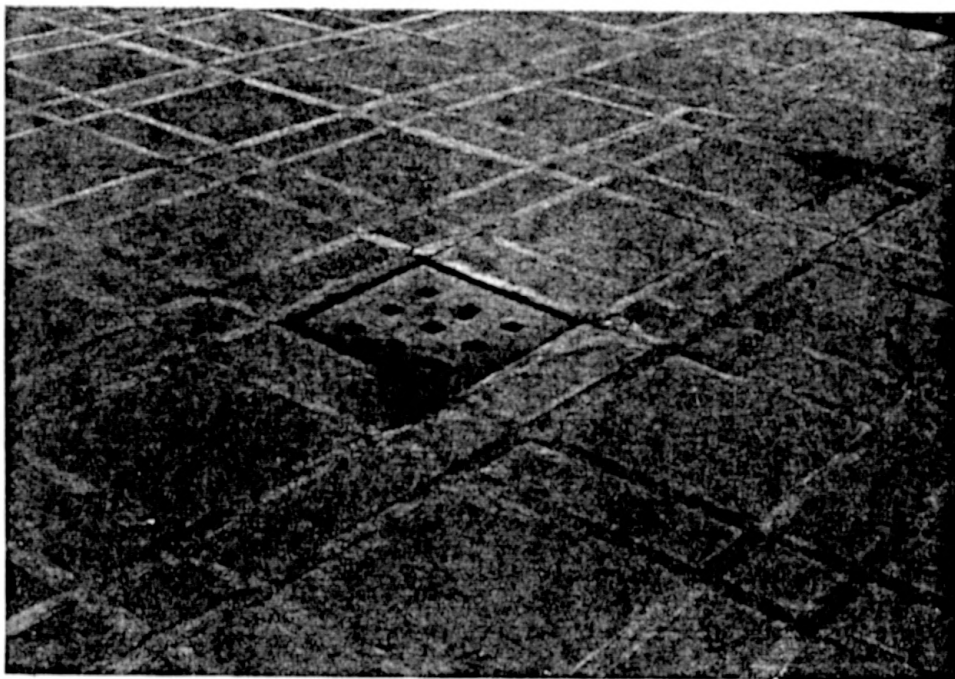




Fig. 10.50: Architectonics—benches on a roof terrace.

### *Multi-Sensorial Perception*

“Multi-sensorial perception”, as we know, has three aspects to it. The first is an attempt at making a building experiential as against it being merely photogenic, while the other two speak of the use of natural light and the relation of the visual to the tactile. As regards the “experiential” aspects of the building, the CIET, it appears, does not use any superficial imagery aimed at modifying the spatial experience of the volumes in the building. In fact, there does not seem to be any form of imagery in the building. The spaces are true to what is seen. There is no attempt at representation. All elements have a significance and contribute to the overall expression of the building. Thus, there

does not seem to be any attempt to make a building photogenic at the cost of its experience and yet it is photogenic.

As can be seen in the plans, almost every room, except those which do not require natural light (like the studios), faces an external wall. This form of design is created with the intention of allowing every room to have adequate daylight and view. It is a widely prevalent design feature in India due to the abundant natural light available almost throughout the year. The intention is also to save energy while providing views and ventilation.

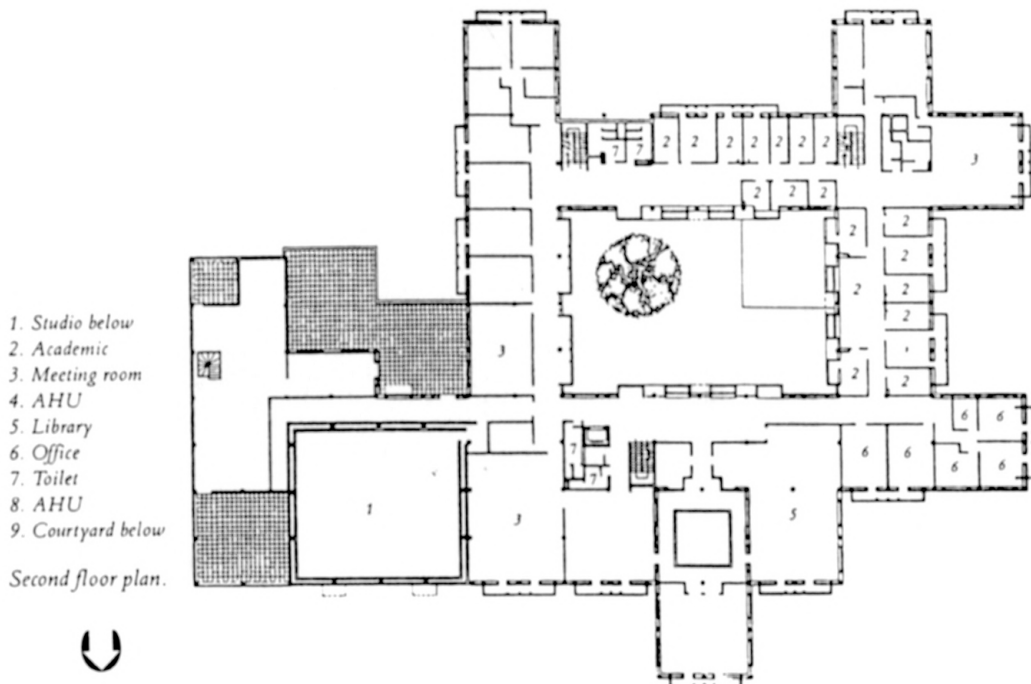


Fig. 10.51: Rooms facing external walls on the second floor.

As regards the relation of the visual with the tactile, we are familiar by now, with the truth of expression achieved in the CIET. The floors, the walls, the

cladding, the ceiling, are all true to their materiality. The rough finish of the cladding material is just as rough to touch as it appears. The concrete is exposed and its appearance is truthful. So also, the floor tiles which are made of either marble mosaic,

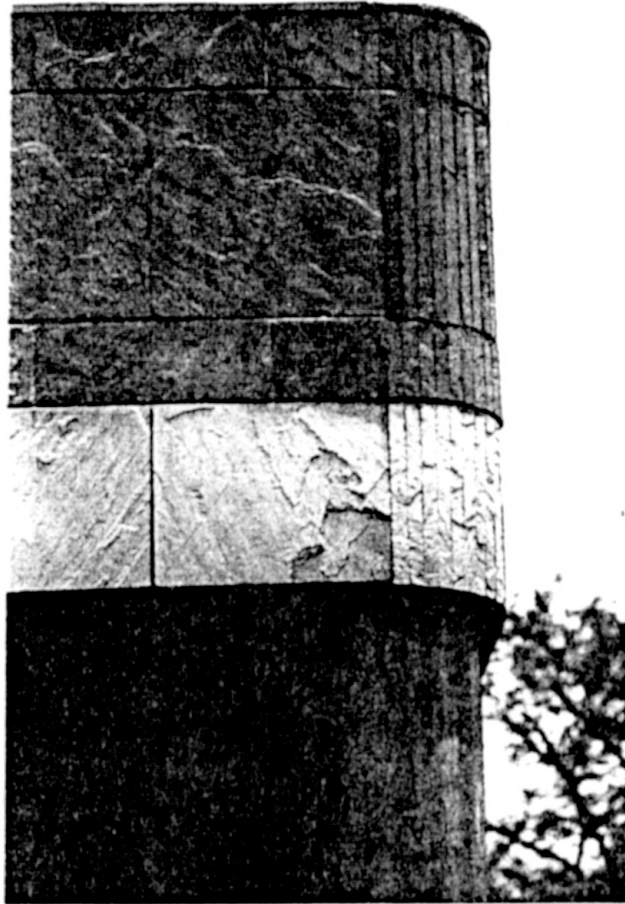


Fig. 10.52: Visual and tactile materiality.

Agra stone, or another traditionally used natural material called Kotah stone found in the desert state of Rajasthan in northwestern India. These materials, unlike say, vinyl floor tiles which can be manufactured to visually represent natural materials like marble, for instance, are not representative of any other material. The temperature, texture, finish,

colour, and so on, are all natural. Thus, the CIET seems to fulfil Frampton's criterion of "Multi-Sensorial Perception" almost in full.

Having examined Rewal's CIET within the framework of the *Revised Taxonomy of Regionalism*, we see that it fulfils almost all the criteria required for the CIET to be called "Abstract Regionalist" and "Critical Regionalist". We know that Correa's IUCAA also fulfils all the above criteria. Therefore, both the CIET and the IUCAA are "Abstract Regionalist" and "Critical Regionalist" with an inclination toward the "Historically Transformative" branch of the *Taxonomy*.

The "Historically Transformative" bias of both buildings indicates the basic difference between the understanding of the concept of regionalism in the East and the West. The bias basically establishes that the two buildings respond to the Eastern realities. It is important to establish this difference because hypothetically, a building in the East as well as the West can fulfil all the axioms in the "Abstract Regionalist" branch and the "Critical Regionalist" branch of the *Taxonomy*. But we have seen that the aims, processes and realities of both the blocs of the East and the West are vastly different. Thus, to understand the purpose behind regional manifestation in a building, it seems necessary to describe the bias a building may have in the *Taxonomy*. Thus a building may be "Abstract Regionalist" and "Critical Regionalist" with a Western bias (displaying its Western approach and intent), or a building may be "Abstract Regionalist" and "Critical Regionalist" with a "Historically Transformative" bias (displaying its Eastern approach and intent). The CIET and the IUCAA are both "Abstract Regionalist" and "Critical

Regionalist” with a “Historically Transformative” bias, thus displaying at a glance the Eastern approach and intent behind the buildings’ regionalism.

But despite such a common identification, we have seen that the two buildings differ substantially in their methods of fulfilling the axioms of the revised taxonomy. This difference, it appears, is due to the differing approaches adopted by the two architects. In the next chapter, the implications of this difference in approach will be discussed in relation to its impact on Indian society.

## CHAPTER XI

### CONCLUSIONS

Both the IUCAA and the CIET have been identified as “Historically Transformative Abstract Regionalist” and “Critical Regionalist” buildings. We have seen that the two buildings also respond to the specific realities of the regions in which they are grounded. The CIET is specific to the northern Indian region and the IUCAA is specific to the western Indian conditions, not just in terms of climate alone, but also in terms of historical and cultural references. The CIET, for instance, uses a morphology that has traditionally been northern Indian. The IUCAA relates, through the basalt stone masonry course pattern, to historical themes of western India. But we have also seen that the two architects’ works, although fulfilling the axioms of the *Revised Taxonomy*, seem to differ from each other in many ways. The following is an attempt to identify the essential differences.

### RATIONALIST AND EMPIRICIST INCLINATIONS

Arthur Kutcher, author of the book *The New Jerusalem: Planning and Politics*,<sup>1</sup> has identified and compared two basic approaches to architecture and planning. Kutcher calls these approaches “Deductive” and “Inductive”. Geoffrey Broadbent<sup>2</sup> identifies these two positions as “Rationalist” and “Empiricist” positions. According to

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<sup>1</sup> Kutcher, Arthur. *The New Jerusalem: Planning and Politics*. Cambridge, Massachusetts: M I T Press, 1973.

<sup>2</sup> Broadbent, Geoffrey. *Emerging Concepts in Urban Space Design*. London; New York: Van Nostrand Reinhold, 1990.



Kutcher, the comparison is from the extreme positions of the two approaches and it is intended to show the way of seeing, thinking and building adopted by the two approaches. In practice, Kutcher emphasizes, one approach may display characteristics of the other to some extent, while yet retaining its original position. Kutcher has evolved the comparison based upon the positions of each approach as regards history, aesthetics and values. The following is a brief summary of each of these positions with relation to the three representative components.

### **The Rationalist Approach**

This approach to design sees reality in terms of basic abstractions which are developed into useable concepts through the process of deductive reasoning. It is a process of isolation, concentration and reduction of certain objects or thoughts. The isolation of an object or thought, Kutcher says, involves conceptually removing the object or thought from its specific context. These contexts could be emotive or symbolic. Finally, these isolated elements are used where needed. The contexts are not used because they are identified as “irrational” and “inefficient” in the present application. The point of initiation of that application is considered a *tabula rasa*, according to Kutcher. Reality, for this approach, is one dimensional and all other associated dimensions are considered to be minor and unreal.

History, for the Rationalists, is not a dominant factor. Architecture must reflect its age, its technology and the state of its arts (which in the West today, has broken

its links with the past). This approach believes in materialism, economic growth, and in scientific and technological wonders. Believing strongly in Modern architecture, the Rationalist approach attempts to bridge the gap between science and art by giving physical, artistic expression to the Rationalist tendencies of our age. Thus, the *Zeitgeist* (spirit of the age) is expressed as a response to the reality of today (which is the gap between art and science). Great art, for the Rationalists, is always ahead of its time, i.e. expressing the future, as envisioned by the Rationalists. This stance, the Rationalists say, has always been attacked by the “insensitive and the narrow-minded”.

As regards aesthetics, the Rationalists feel that aesthetic features in Modern architecture have two functions to fulfil. The first function, as has been discussed already, is to express the spirit of the age. An example of how this aesthetic can be achieved in architecture can be through the metaphorical expression given to scientific concepts in terms of space in Modern architecture. The second function which the architecture of the Rationalists performs, is to facilitate the *individual* expression available to the architects in an effort to explore the new range of artistic freedom available today. Emphasis is placed on the “individual” expression since it conforms to the “spirit of the age”, i.e. the realization of individual freedom.

In relation to the attitude towards values, the Rationalists think that the value-free analytical methods of science should be adopted. Values, the Rationalists think, are relative to the cultural and social environments. We all retain a residue of values from a previous age. Historical forces represent neither an absolute good, nor an

evil, since absolute values are non-existent. Therefore, the value-free analytical methods of science must be adopted in an effort to reinforce the present spirit of the age.

Thus we see that the deductive approach is mainly a theoretical and conceptual approach believing in solutions offered by individuals with their autonomous ideas, and relying on abstraction rather than data to evolve solutions. It seeks to express the contemporary without connections with the past. If concepts from the past are used, they are isolated from their contexts and used as independent entities in another context. From this point of view, the Rationalist subscribes to the amoral concepts of value-free scientific methods (mathematically deductive), rather than get weighed down with the restrictive nature of morals.

### **The Empirical Approach**

The Empirical or Inductive approach , on the other hand, takes an antithetical stance as compared to the Rationalists. The human senses form the bases of this approach. The everyday perceptions and the direct experiences associated with these perceptions have a validity which “may out-balance the rates of economic growth projected ten years hence”. People’s feelings and sensitivity about historical and symbolic values must be respected. There must be an effort to relate the various levels of perception. Thus, as against using isolated, reductive concepts, an effort must be made to think about and perceive phenomena as organic wholes. This has been observed in the history of humankind, according to the Empiricists.

About history, the Empiricists favour a continuity in time as against the tendency of the Rationalists to express the spirit of the age. The age will inevitably get expressed in the contemporary situation, and so, special efforts need not be taken towards this end. We as architects are under no obligation to impose something alien and unworkable upon the masses.

*"History for us represents an interrelated continuum. The cumulative built record of this continuum, which is expressed in the city's fabric of ordinary buildings as well as in its monuments, deserves to be treated with some measure of respect. The great surgical operations now being performed upon this fabric are unprecedented in scale and character. . . . The operations are tearing out the hearts of the living, functioning cities and replacing them with randomly related complexes whose purpose is in any event not the realization of a new aesthetic vision, but rather of maximum return on investment."*<sup>3</sup>

Thus, while trying to maintain the continuum of history, the Empiricists also do not favour the profit making tendencies of the Rationalists. In contrast to the Rationalist position, which favours the almost complete use of scientific logic, the Empiricists seem to think that the technological innovations and economic resources give us wider choices, rather than limited choices. This must be recognized, according to the Empiricists.

As regards aesthetics, the Empiricist approach says that—

*. . . "architecture is a tangible art which defines and creates specific places which are to be lived in or used. Its aesthetic impact comes from its direct physical presence, from a sense of containment, of balance, of*

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<sup>3</sup> Kutcher, Arthur. *The New Jerusalem: Planning and Politics*. Cambridge, Massachusetts: M I T Press, 1973, p. 62.

*counterbalance, of movement of light and shadow, of mass, surface and texture, and of scale. Its sense impact involves not only visual relations, but also sound and touch. The total experience is also bound up with certain meaning. These meanings are not, strictly speaking, 'symbolized' or 'represented' by the experience; they are embodied within it. . . . this is for many people a difficult point to grasp. "*<sup>4</sup>

While the Empiricist school thinks that a building is to be sensed rather than “understood”, the Rationalist point of view says that a building needs primarily to be “understood” rather than sensed. In the Empiricist approach, there are no metaphorical associations using concepts of science. Instead, the Empiricists favour the expression of space or structure in itself devoid of all romantic, superficial and associative aspects. The position of the Rationalists in this regard is further criticized by the Empiricists—quantum mechanics or physics and other scientific principles deal with very different things and in no way are they related to architecture, except if they can be used structurally (and not metaphorically). According to the Empiricists, such attempts at metaphorical connections are private individual notions and must remain so. They must not be incorporated in architecture which is used by the masses.

Empiricists also argue against individuality in architectural expression by calling it an “irresponsible” imposition upon the masses. The idea of aesthetics is not to create isolated works of brilliance, but the creation of a civilized and humanly scaled continuation of our existing environment.

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<sup>4</sup> Kutcher, Arthur. *The New Jerusalem: Planning and Politics*. Cambridge, Massachusetts: M I T Press, 1973, pp. 63-64.

As regards “values”, the Empiricists place great importance in the continuation of traditions and associated values. This position is a result of the concern for the general public, as against the “private” and “particularistic” interests of the Rationalists who, the Empiricists say, are concerned only with “value-free” notions of the logic of profit-making. Few will accept, according to the Empiricists, that property speculation is a “noble” activity.

*“Values are the standards by which other things are measured. In their ultimate form, they cannot be further explained by other quantities or purposes. Logically speaking, they are absolutes. From an Empirical point of view, on the basis of common human experience, it seems permissible to say that nature, and the man-made landscape in its finest form, as well as historically cumulative works of man, all have intrinsic value, a spiritual worth which goes beyond questions of their monetary and functional values, and of the potential uses. In human terms, these ‘Public Goods’ affect us all and they belong to us all, they are our common heritage. Their ‘function’ is to elevate the human spirit.”*<sup>5</sup>

Thus, we see that the Empiricists believe in “moral” values in architecture, they prefer to continue the historical fabric of the built environment as against the *tabula rasa* approach of the Rationalists. Symbolism and representational elements are not favoured by the Empiricists. Their concern is the people and their human senses as they are affected by built volumes, rather than the visual attractiveness and the monumentalization of the built form. Science is imbibed as per requirement rather than consciously displaying its capabilities and using it as a main vehicle for expression. Aesthetics is experiential rather than visual, since for the Empiricists, a building is to be “sensed” rather than “understood” or interpreted.

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<sup>5</sup> Kutcher, Arthur. *The New Jerusalem: Planning and Politics*. Cambridge, Massachusetts: M I T Press, 1973, pp. 69-71.

Having established the differences between the two modes of thought, we see that the IUCAA uses elements which are “representational” and “symbolic”. There is an emphasis on the visual, as the building, due to its numerous representational icons, attempts to convey meaning. In other words, it calls for an “interpretation”. There is extensive use of contemporary concepts of science, used not as per requirement, but to convey the “capabilities” of science. There are several metaphorical connections with scientific concepts. The Black Hole of the kund, the aesthetic of “black on black on black”, the use Roche Lobes, and so on are all metaphorical in their function. The four statues and the sky dome in conjunction with the cosmograph are to be “understood” rather than experienced. The concept “ritualistic pathway” is used out of context (it is originally associated with temples) and does not qualify as a traditional space in terms of volume. Thus, it is isolated and reductive in terms of its connection with history. There does not seem to be an attempt to identify contemporary Indian society’s needs in terms of spaces with which people identify. Besides, one can argue that the IUCAA does not attempt to maintain a continuum of the built fabric as it relates to culture, as it has almost completely ignored the Islamic period and has drawn heavily upon the Vedic period.

Correa’s IUCAA is an “individual” effort and is theoretical and conceptual. It is individual because, the relation with culture, history and the Indian society in general, is not what the people have been *known* to identify with. It is Correa’s personal interpretation of how a building should be made if it has to manifest contemporary culture. The fact that the building is a theoretical conception is evident due to the numerous icons used. The building clearly intends to express the spirit of the age,

not in terms of technology, but in terms of its symbolism as regards the future of Space exploration and India's role in it, as also the universality of the study of Outer Space in the "Age of Reason". Correa's ideology, as has been written in the form of a separate chapter earlier, speaks of viewing the past with twentieth century sensibilities. The twentieth century, Correa says, belongs to the Age of Reason". There is an implicit assumption that Correa understands India as being a party to this "Age of Reason", and it is through this sensibility of scientific logic that Correa interprets the past.

The Rationalists prefer to express the new freedom associated with individual expression. Great art, for the Rationalists, is always ahead of its time, leading the way to the future. Correa subscribes to the thought of Louis Kahn when he said—"Architecture deals with the recesses of the mind. With that which is not yet said, and that which is not yet built."<sup>6</sup> This statement and all the above arguments display the similarity between Correa's ideology (and as it is manifested in the IUCAA), and the Rationalist school. It may, therefore, be said that Correa's ideology (and as it is manifested in the IUCAA) is inclined toward the Rationalist ideals. The IUCAA and the ideology of Correa appear to contrast with the CIET and ideology of Rewal from the point of view of these two schools of Rationalism and Empiricism.

Brian Brace Taylor, author of the book *Raj Rewal*<sup>7</sup> has alluded to the fact that Rewal's work may be called Empiricist. Taylor says that Rewal emphasizes the

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<sup>6</sup> Correa, Charles. "Vistas" in Steele, James (ed.). *Architecture for Islamic Societies Today*. London: Academy Editions, 1994.

<sup>7</sup> Taylor, Brian Brace. *Raj Rewal: With an Essay by Romila Thapar*. London: Mimar Publications, Concept Media Ltd. 1992.



human perception of spaces within buildings. Rewal involves the user's point of view when designing. As we have seen in the chapter on Rewal's ideology, Rewal views the act of building, not as the work of an individual, but as a collaborative effort between the architect, contractor, craftsmen and users. This attitude corresponds with the Empiricist agenda that growth of a city and its architecture are part of a unified organic whole and none of the phenomena in the evolution of a city are isolated within themselves.

Rewal's use of science is not merely metaphorical, as tends to be in the case of the Rationalists. Science is used with the intention of expressing the truth in a building's form. This seems to be a natural outcome of the collaborative effort between the architect, contractor and craftsmen. Associated with this outcome is the attempt at arriving at a "poetic and psychic" expression which Rewal thinks has disappeared due to the "hyperspecialization" of building trades in architecture today. The "sterile" nature of buildings, which Rewal thinks is the outcome of this "hyperspecialization", is what has prompted Rewal to favour the unified approach to building, resulting in the use of science with the arts and spirituality. Thus, science is used not in isolation with the intention of expressing the *Zeitgeist* but as a part of a unified whole, which speaks more than just contemporary advances in science.

Such a unified expression also fulfils<sup>6</sup> another Empiricist requirement—that of continuation of tradition in building. There is a certain transformation in the traditional art achieved by the use of modern technological tools. Thus, while tradition is maintained, there is also a transformation reflecting the present.

Rewal prefers to use traditional spaces with which the Indian people can associate. As we have seen, he has attempted to identify the traditional built expression at the level of “principles” as against mere replication of building forms, and has attempted to transform them to suit contemporary needs while using today’s technology. Rewal prefers not to impose his personal interpretations of connections with culture and history, upon the people—an ideal which goes against the principles of the Rationalists. He does not seem to engage in the expression of personal freedom which is identified as a characteristic of the contemporary era by the Rationalists. Also, technology is used not as the main vehicle in Rewal’s architecture, but is imbibed, i.e. making use of the wider choice offered by technology—another Empiricist view point.

Rewal does not use icons to represent a theme or concept. If there are representations of certain themes or concepts in Rewal’s work, it is more with the intention of function and validity in relation to people’s sensibility, rather than for purely representational purposes. There are no metaphorical expressions used by Rewal in his work. This aspect also does not conform with the Rationalist agenda, but it does fulfil the Empiricist agenda.

It appears, therefore, that Rewal has an Empiricist inclination, while Correa might be called a Rationalist. It is essentially this basic difference that explains the differing approaches to the specific designs studied. Another difference, as has already been mentioned at the beginning of this chapter, is that the two architects respond to the *respective* regions in which the two buildings are located.

## **THE UNIFYING CHARACTERISTICS**

With the extremely diverse composition that makes up the nation of India, what may be required is a certain unity for an architecture to be identified as “Indian” rather than “northern Indian” or “western Indian”. This is not to say that a building should not reflect its relation to its specific context, but rather to say that the works which have been identified as regional in India so far, need also to display a unifying character while demonstrating connections to their specific contexts. So what are these unifying characteristics in the IUCAA and the CIET?

### **Expression of Contemporary Reality**

The framework within which the two works have been identified so far enables the identification of a number of common characteristics. The fact that the two buildings are a response to the present realities of India is in itself a commonality. Both the buildings serve to connect India to the world culture of today. The advent of the “Age of Reason” in the mainstream culture of India has forced the government to devise ways and means to enable the people to interact with other cultures in the language of the universalizing culture and its understanding of phenomena through a primarily western logic. The CIET is clearly such an effort.

The IUCAA, on the other hand, seems to be an attempt at contributing toward the contemporary global understanding of the universe, again in the language of

the universalizing culture, built particularly for those initiated in such a language. The building, through its iconography, clearly displays this transformation of the local culture to the universalizing culture. For example, the sky dome read in conjunction with the cosmograph below it displays the understanding of the universe in two different forms of logic. Both buildings, therefore, seem to indicate the transformation of the people within the realm of this new universal language, a move initiated by the first prime minister of India, Jawaharlal Nehru. Thus, in terms of time, the two buildings are a response along a common direction. This commonality expresses the transformation of the Indian society in the realm of the “Age of Reason”.

### **Connections with the Past**

Another commonality is the fact that both buildings make connections with the past. The association of the Indian subcontinent with ancient culture coupled with its deliberate move to join the “Age of Reason”, necessitates the demonstration of both these aspects in a contemporary architecture. The two buildings seem to adequately demonstrate the incorporation of certain concepts of the past.

The IUCAA displays the past primarily through the incorporation of themes and imagery. The themes are the ritualistic pathway and the *kund*, while the imagery is in the form of the cosmograph, the equatorial sundial, and the statue of the sage Aryabhata. Thus, the juxtapositioning of both the past and the present in the form of themes and imagery are an adequate response of the Indian reality. The CIET uses a

traditional morphology which demonstrates the past and the use of technology of the “Age of Reason” to display contemporary realities. In terms of themes, it uses the ancient Indian concept of *Rasa* which connects it with the past. Thus, both the buildings simultaneously display the past and the present, reflecting the reality of the country.

### **Craftsmanship**

Another commonality in the two buildings is the use of traditional craftsmanship. Correa has used traditional urban craftsmanship in the IUCAA, while Rewal has used traditional craftsmanship which may be called rural in nature. Correa has also used traditional urban artists in addition to craftsmen. The intention of Rewal is to transform authentic Indian craftsmanship to suit today’s forms of expression while still retaining its origin.

The ancient arts and crafts of India may be called rural since the cities of today are based upon contemporary values of commerce (Mumbai) and politics (New Delhi). The towns which are ancient in nature like Benares are no longer identified as cities, but as towns. If they are classified as cities, as in some cases like Jaipur, the center of the city is not the part which is ancient, but rather that which is contemporary. Also, the ancient portions are usually protected and people are not allowed to live in the protected monuments. Thus, the crafts tradition which may have survived until today may be said to be located only in the areas identified as rural today.

## **Climatological Expression**

The design of the two buildings is based upon the climate. The two buildings effectively counter the heat, humidity, light variations, wind flows, radiation, and so on. While this commonality can be called a feature specific to a region, the fact that the two architects have adopted this strategy rather than relying upon artificial light and ventilation, itself is a commonality.

## **The Use of Iconography**

The axiom of iconography in the framework of architectural regionalism may be an effective way of demonstrating an “Indianness” of a building. Both Correa and Rewal have used iconography in their buildings. While Rewal has used iconography in an effort to continue the traditional unified approach to building design, Correa has used iconography to convey the Indian past. It must be noted that both the architects have used craftsmen and artists to create the icons. Such a move is unique and can be encouraged. Iconography can be the niche for craftspersons and artists in the building industry. This may conform to the unified approach which Rewal has identified as a unique and essential feature of traditional Indian architecture. Such a unified approach will also help in the creation of *Rasa* in a building. Besides, it will revive the tradition of arts and craft in India due to the patronage offered by architects. In effect, the profession of architecture will help a unique feature of Indian culture to survive and grow, after being under threat during the colonial era. It will be a service not just to the profession, but also to Indian

society and culture. Besides, it can grow to become a hallmark of contemporary Indian architecture.

Coupled with this use of artists and craftspersons, the themes from the past will form another such *continuation* (as against revival) of the architecture in India. This is especially true of the concept of *Rasa*, which Rewal thinks has been a distinctive feature of the Indian architecture of the past.

In the case of Correa's IUCAA though, one can interpret his incorporation of themes from the past as merely connecting to the past in an effort to display it. There does not seem to be an actual continuation in time as has been observed in Rewal's work. The IUCAA appears to treat the past as the bygone and the images and connections used by Correa seem to serve as reminders rather than as potential transforming agents. In other words, the themes used by Correa are more metaphorical. The kund, for example, has been used as a metaphor for the Black Hole of Outer Space. The ritualistic pathway is reminiscent of the past, a certain nostalgia seems to be associated with it.

While I do not say that such an approach is incorrect or inappropriate, I do say that Rewal's building may have more potential to continue the authentic traditions of Indian architecture, as against Correa's work which seems to be an expression of architecture determined by today's realities only. In other words, Correa's work seems to be static in terms of time and looks back at the past, while Rewal's work, due to its continuity with the past, seems to have a momentum in terms of time. It can be carried

forward into the future since it is based upon “principles” that are not severely affected by rapidly changing forces of technology and aspirations. Rewal’s “principles” as we have seen are based upon climate which does not change and social spaces determined within that climate. Thus, there seems to be a certain timeless quality to his buildings even while his architecture expresses its moment in time.

Correa’s building, on the other hand, seems to appropriately express its time. But since it relies upon aspirations of a society and technology (both factors may undergo change rather rapidly as compared to climate), the relevance of its expression may fluctuate rapidly. One can argue that there is a longevity in Correa’s architecture due to its response to climate. But such a response is at the level of the form of a building only. Correa’s ideology does not relate the spaces created in a building to the social behaviour of a society within a certain climate. It is from this point of view that Rewal’s architecture seems to have a quality of timelessness. It creates spaces based upon an unchanging parameter of climate and its relation to a society which has lived in that climate for centuries. People can, therefore, identify with the spaces and their sequence.

Such a continuation also enables continuity in related aspects of Indian building traditions like the use of craftsmanship, for instance. This connection of craftsmanship with climate is evident in the fact that the use of *jalis* in northern India was not necessarily decorative only. It’s Islamic origin associates the *jali* with privacy, light, ventilation without letting excessive amounts of harsh sunlight in, and the ability to see without being seen. Thus, the functional aspects of the *jali* seem to far outweigh the



decorative aspects. Such functions necessitated the use of craftsmen at the time. Each *jali* was distinctive in itself and no patterns were repeated in another building.

The demand for such *jalis* in building design today, is not sufficient for industrial mass production. Besides, industrial mass production will limit the design of the *jalis* in terms of patterns and sizes of panels. This necessitates the use of craftsmen, especially considering that the *jalis* which Rewal prefers to use, are made in stone which has been known to effectively withstand the sun's heating and bleaching properties. Through the use of craftsmen, the *jalis* can be of varying sizes, proportions and patterns enabling individual artistic expression of the craftsman. Thus, it appears that as long as Rewal uses *jalis* as a climate design strategy, and as long as *jalis* are not mass produced like stone floor slabs, the need for craftsmen will remain. Thus, it appears that Rewal's use of climate design necessitates the use of craftsmen.

Correa, on the other hand, uses craftsmen to create icons. Correa's icons carry a meaning which conveys the present realities and the themes of the past. The use of traditional urban craftsmen and artists in Correa's work expresses urban traditions in Correa's design. It helps incorporate craftsmanship and artistry in a building. Such a unified approach can be encouraged as it has been identified as a traditional feature of architecture in India.

## CREATION OF A SCHOOL OF THOUGHT

The above commonalities can be nursed to help form a contemporary Indian school of thought. Such a school of thought can be an effective tool which can be used toward the creation of a regional and national architectural identity. As regards Frampton's theory, the concepts are important from the point of view of the future. As we know, India has invited foreign investment in almost all spheres of economics since 1992. This move makes the regional approach to architecture even more important. It will be only a matter of time before buildings determined by standardized components of industrial production overwhelm the built environment. Such an environment will inevitably result in the phenomenon of "universalization" which Frampton fears. The theory of *Critical Regionalism* which is in response to such a universalizing phenomenon may be used today in preparedness against the invasion of universalizing forces. It is with this intention that the theory of *Critical Regionalism* has been incorporated within the domain of the *Taxonomy* and the two buildings analyzed within this broad framework.

The use of climate as a determinant, iconography and cultural discourse as "myths" (in the form of *Rasa*, and the ritualistic pathway, for example) form effective strategies which contribute toward the establishment of an Indian identity in the face of the inevitable universalizing forces. In addition to these axioms, the need for contextuality, experientiality, and honest architectonics also contribute toward the formation of a strong resistance against the universalizing forces. As we have seen, the two buildings display contextuality in relation to the natural environment. In addition to

such a contextuality, a sensitivity to the surrounding built environment will help create an identity at the immediate physical scale and not just at the building scale.

The axioms of experientiality and architectonics emphasize truth in expression. These two axioms can help in the formulation of ethics in an “Indian” architecture of today—a before-the-fact commitment to maintain an Indian identity against the invasion of universalizing forces.

### **CRITICISM OF THE TWO WORKS**

The history of India, according to Correa, is layered in three segments. The Vedic period was the first layer which saw all the phenomena on earth as being interconnected and as part of one universe. These beliefs about the sacred universal whole were replaced by the Islamic values of connecting the heavenly Garden of Paradise with the Earth. Finally, the British brought with them the values of Rationalism and scientific logic. Architecture, for Correa should be an expression of this progressive transformation in the history of India. Despite this understanding, Correa seems to have drawn heavily upon the Vedic culture and has almost neglected the Islamic period. There seems to be a jump in time between the Vedic period and the colonial period. None of his writings and publications have explained this omission.

Taylor, in the book *Raj Rewal*, has spoken about the buildings of Rewal being a discourse among intellectuals. Taylor thinks that the attempts of Rewal, though

commendable, suffer from lack of connection with the common man. The same can be said of Correa. Correa's buildings, though image oriented, convey a meaning using two images to convey a single meaning. The skydome has to be read in conjunction with the cosmograph, the *kund* is associated with the landscape within, and the statue of the sage Aryabhata has to be read with the other three statues. Besides, the ritualistic pathway, although an ancient Indian concept, has been traditionally used in temples. The use of this pathway (out of context in the IUCAA) to simulate the movement within a temple may not be recognized by many although the exhilarating feeling experienced when walking along this pathway, due to the light wind and temperature variations, is enjoyed by users.

As regards Rewal's work, Taylor says that the use of the traditional morphology may not be identified by the people as theirs in today's times. The significance of the *chhatris*, for instance, may not be recognized. For a person initiated in such a vocabulary, the *chhatri* may seem recognizable, but does the common man associate himself with such spaces?

Another criticism of Rewal's work relates to questions about the effectiveness of the spaces provided. The lessons learnt from the past by Rewal are from the pre-colonial era. The morphology of spaces which belonged to that era may have undergone a substantial change during the colonial and the post-colonial eras. Many generations after the pre-colonial era have lived in spaces which may not have been like those Rewal draws upon. Also, after Indian independence, the advent of modernism may have further altered people's perception of space. As one can see today, the modernist

concepts have lingered for a very long time and many architects today still create the very functional spaces of the modernist era. Having become used to such spaces for generations now, do the Indian masses identify with the spaces used by Rewal as living spaces? Or do they see them as their “heritage”?

But this issue can be viewed from two angles. Do people perceive the spaces provided by Rewal the way they are intended to be perceived, i.e. do people see these spaces as their spaces at all? The word “their” implies the word “heritage” also. If people identify such spaces as their heritage, they may be said to *identify with* the spaces, not in terms of function necessarily, but in terms of belonging, and a sense of identity. The other issue would be whether people use the spaces the way they are intended by Rewal.

This latter issue of whether people use the spaces the way they are intended can be tested only by observation. Such a study might yield meaningful results. If it is found that the people in fact use the spaces in the building the way they are intended, then the use might imply a sense of identification by the people with the spaces. If on the other hand, it is found that people do not use the spaces the way they are intended, then Rewal’s efforts may be described as a discourse among the initiated.

Thus, we see that Correa’s IUCAA may be called an exercise in intellectual discourse since the building is to be “understood”, and this can be done only by those who are initiated in the relevant vocabulary. The initiated are usually those who

are educated in the western concepts, thus the IUCAA's meaning is out-of-bounds for the lay Indian. The CIET, on the other hand attempts to relate to people's perceptions, but whether it does so in reality needs to be tested. Thus, although both architects aims are commendable, their efforts may not be interpreted the way they are intended by the common man on the street.

## **THE REVISED TAXONOMY OF REGIONALISM**

Having compared the two buildings with regard to their differences and commonalities, it seems necessary now to discuss the framework within which the two works were examined. The framework of the *Revised Taxonomy* is, as we know, a combination of Eastern and Western thoughts on regionalism as put forth by three theoreticians. The causes for contemplating a regional architecture in the two blocs of the world, as we have seen earlier in this thesis, are different. While the theory of *Critical Regionalism* aims to "create" a regional identity within a homogenous globalizing environment, the original *Taxonomy of Regionalism* as designed by Powell and Ozkan aims at "retaining" and continuing the identity of ancient cultures of the East which are now faced with the tendencies of universalization.

But besides these differences, several<sup>6</sup> others seem evident if the two theories are examined from the point of view of Rationalist and Empiricist philosophies which Kutcher has identified as the two main positions in today's architectural thought.

The theory of *Critical Regionalism* seems to display characteristics of the Rationalist school. The following is a point – by – point explication of this tendency.

1) For the Rationalists, the intention in architecture should be to disregard history and build upon the Modern movement in architecture. The attempt is to express the present age. The theory of *Critical Regionalism* very consciously proposes to disregard the pre-modern past and places itself between the Neo-historicists and the Neo-avante-gardists with an inclination towards the latter. Frampton mentions that the technology and expression of architecture must represent the contemporary age and not lapse into the forms and symbols of the past. The intention of *Critical Regionalism*, according to Frampton, is not go back to the vernacular, but to achieve a regional identity in the present environment of technology. These intentions are in conformity with the Rationalist argument. As regards technology, one may say that the Empiricists are not against present day technology. But the Empiricist position, as compared to the Rationalists, does not limit itself to the present day technology. The argument, as put forth by Kutcher, states that the empiricist views today's technology as another option rather than the only option. Based upon this understanding, we see that *Critical Regionalism* limits itself to the present technology and sees it as the only option. This is one area where the theory of *Critical Regionalism* displays Rationalist tendencies.

2) "This philosophy (Rationalism) is . . . a base for action. The existing situation must be made to conform to the ideal. . . . Man overpowers a hostile world and a recalcitrant past; he re-moulds it in the image of his abstract reason."<sup>8</sup> In this statement, the words/phrases

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<sup>8</sup> Kutcher, Arthur. *The New Jerusalem: Planning and Politics*. Cambridge, Massachusetts: M I T Press, 1973, p. 59.

“base for action”, re-mould” and “overpowers” are important for us. The words imply a reactive position with the understanding that the present is not “ideal” and so, the present trends must be “overpowered”. The motivation behind the theory of *Critical Regionalism* is similar. Frampton has interpreted today’s situation to be less than “ideal” and to “overpower” the trends of universalization, a “re-mould”-ing of architecture must be attempted. The phenomenon of universalization is the “base for action”. This understanding is another area which demonstrates the Rationalist leanings of the theory of *Critical Regionalism*. (Simultaneously, it must be noted that *Critical Regionalism* attempts to resist the Rationalist tendencies of the universalizing forces of the technological civilization. This situation implies that the theory of *Critical Regionalism* tries to resist a Rationalist reality by using Rationalist methods.)

3) According to Kutcher, the Rationalists remove objects from their contexts, resulting in a reductive and isolated use of the concepts which then become devoid of their emotional associations. These objects or concepts can be from the past or from another part of the world. Frampton explicitly proposes the use of alien elements devoid of their sentimental/nostalgic associations. The use of such elements seeks to connect meaningfully the local architecture with the world culture. Utzon’s Bagsvaerd church with its curling ceiling reminiscent of the Oriental pagoda is used out of context. The “meaning” in this example, according to Frampton, arises in the kind of space created in the interplay of the ceiling and the natural light filtering through. Such an interplay appeals as sacred to the human mind, says Frampton. The church and the pagoda are sacred places. But the feeling associated with the ceiling in the Bagsvaerd Church is without the ancient (nostalgic) associations of the pagoda. Such a reductive use of



concepts further identifies the theory of *Critical Regionalism* with the Rationalist mode of thought.

4) Rationalist theories, according to Kutcher, are conceptual as against Empiricist practices of evolving ideas based on existing examples. Also, the Rationalist position implies that a building needs to be understood through its symbolism and meanings. *Critical Regionalism* is a manifestation of both these situations. It is a theoretical proposal as against the original *Taxonomy of Regionalism* which is not a “proposal”, but a systematic classification of existing trends. Also, the proposal of Frampton to connect to the world culture involves the use of foreign concepts. Thus a building has to be “read” as connecting to a form in another part of the world to be understood.

The above four points illustrate the rationalist inclinations of the theory of *Critical Regionalism*. But, as has been mentioned earlier, Kutcher cautions against interpreting objects as completely Rationalist/Empiricist. This is because most of architectural practice may display characteristics of both schools while emphasizing the characteristics of one school. Based upon this understanding, the fact that the theory of *Critical Regionalism* displays the Empiricist characteristic of designing with relation to human perception, does not alter its identification as a rationalist theory. This is because the predominant characteristics are still Rationalist.

As regards the original *Taxonomy* designed by Powell and Ozkan, the predominant characteristics seem to display an Empiricist tendency. The *Taxonomy* is an attempt based upon observation as is the Empiricist strategy. Certain tendencies of

architectural practice are identified and differences within them enable the formation of the *Taxonomy*. It is not an attempt to devise a set of criteria to achieve an ideological position. It is merely identifying and establishing differences.

The primary factor which distinguishes the *Taxonomy* from the Rationalist theory of *Critical Regionalism* is the attempt to maintain a temporal continuum from the distant past to the present. The *Taxonomy* identifies architectural trends all of which maintain a connection with the pre-modern past. History and tradition are respected. Out of this main observation arise the two branches of people-built architecture and architect-designed buildings. These two strains are further examined leading to subcategories in each strain.

The *Taxonomy* is not conceptual and does not claim to have an ideological basis. Its only intention seems to be to understand and encourage the practice of regional architecture. It is not prescriptive in nature and leaves the Western trained architect to practice even vernacular architecture. From this point of view, it is not limiting or prescriptive as the theory of *Critical Regionalism* appears to be. Thus, it is not an attempt to “create” an architectural identity suggesting a *tabula rasa* approach, as does the theory of *Critical Regionalism*. Also, the *Taxonomy*, in conformity with the Empiricist position, acknowledges today’s technology as an option unlike the Rationalists who see it as an essential incorporation. All the above characteristics suggest that the original *Taxonomy of Regionalism* is Empiricist in nature.

The combination of the Empirical *Taxonomy* and the Rationalist theory of *Critical Regionalism* gives the *Revised Taxonomy* not only a global character due to the origins of the two theories, but also a wider scope in terms of basic philosophies of architectural thought of today. It is, therefore, a framework which is widely encompassing.

The framework displays the polarities of:

- 1) People-built architecture against architect-designed buildings,
- 2) Vernacular architecture against Modern architecture,
- 3) Eastern trends against Western trends (based upon the realities of each bloc), and
- 4) Rationalist against Empiricist ideologies.

But despite this wide scope, the *Revised Taxonomy* cannot be said to be all encompassing. Some theories proposed by theoreticians are not included in the *Revised Taxonomy*. For example, Juhanni Pallasmaa has proposed a regionalism based upon the physiology of a people.<sup>9</sup> His argument is that certain forms of cultural expression may be seen at the unconscious biocultural level and such cultural characteristics resist change vigorously. An architecture based upon such an understanding of culture can have regional characteristics of a lasting value. Pallasmaa's proposal may be difficult to place

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<sup>9</sup> Pallasmaa, Juhani. "Tradition and Modernity: the Feasibility of Regional Architecture in Post-Modern Society" in *Architectural Review*, 1988. Pallasmaa argues that some characteristics of a community are inherent in the body and mental structure and have evolved through ages. He demonstrates this idea by giving the example of the differing gestures of the hands in the course of communication to convey the same idea by various European cultures.

in the *Revised Taxonomy*. But if it cannot be placed, the *Taxonomy* can be added to, (as has already been done with the theory of *Critical Regionalism*) to accommodate such proposals. Such additions may help widen the scope of the *Revised Taxonomy* making it a comprehensive classification of the significant proposals for a regional architecture.

### **LIMITATIONS OF THIS RESEARCH**

This research, as has been mentioned earlier, has a limited scope. It cannot be said to represent the entire argument for a regional architectural identity in India. The works selected are examined within a framework which is based on the understanding of the concept of regionalism as defined by two authors. It has not been tested so far for its universal applicability. It cannot, therefore, be said to have been accepted by all concerned.

The works selected have been designed by architects and not by people themselves. As has been mentioned earlier, the East is characterized both by buildings that are built by architects and by people themselves. Thus, the buildings studied are a single person's understanding of how a building should be. This difference is significant because the buildings built by people themselves are also occupied by the builders. Whereas, when an architect designs buildings, the building is usually occupied by others. Thus, this research does not address the work "designed" by people themselves. It addresses the work designed by architects for other people.

The two architects have a Western training as both architects have studied architecture in the west. While Rewal studied in India before he left for Britain, Correa's architectural education was only in the West. Such an education might introduce significant bias in the two architects' works. Certain Western concepts may be utilized unknowingly. Besides their understanding of the Indian situation might have traces of a Western perception to it.

The buildings selected are urban in nature and so are used by a particular type of people who are educated in English and have a Western bias themselves. The buildings are not designed for the humble rural villager whose understanding of architecture may be something completely different.

The two buildings are institutional in function and are designed to be used only during the day and for a specific purpose. To broaden the validity of the research findings in this thesis, it may be necessary to study buildings which are designed for other functions.

Thus, this research addresses two buildings designed by architects. These architects have trained and lived in the West and continue to visit the West even today. The buildings examined are urban in nature, built in large cities, and perform a specific function. The research findings of this research may be said to be valid within these limitations of this thesis.

## FUTURE DIRECTIONS

As has been discussed in the section of the criticism of the two architects, a study of whether people perceive the buildings as they have been intended to be perceived needs to be done. The study can be done from two points of view. The first being whether people recognize the spaces and images for what they convey, while the second study can be a phenomenological observation of the use of the spaces created by the two architects.

Additionally, there can be other studies, similar to the research done in this thesis, which examine buildings with functions other than institutions, within a specific framework. The buildings could be in areas other than western India and northern India. A good example would be that of architect Laurie Baker in southern India who has been known for his low cost, self-help housing. Baker has designed a number of other types of buildings too. The works of younger architects who have been known to be very concerned about a regional and national expression in contemporary architecture in India deserve to be studied. These architects include Uttam Jain, Romi Khosla and Ranjit Sabhiki to mention only a few.

Through my research, I came across several writings of significance which have already established the regional importance of many other architects in India. While further examination of whether or not regionalism is displayed in works of contemporary Indian architects may yield valuable results, it seems imperative that the

writings done so far be studied to establish commonalities. The commonalities discussed above can be further expanded if works of other Indian architects who have been committed to a regional identity are studied. Numerous architects have been identified as striving toward a contemporary Indian expression in their works. The need of the hour now seems to be expand on the commonalities identified in this thesis. These expanded commonalities, coupled with the ethics like experientiality and honest architectonics can lead to the formation of a school of thought which advocates an Indian identity in modern architecture. Schools of architecture in India can then propagate such a strategy to create an effective culture of Indian architecture which will be able to survive the inevitable onslaught of the universalizing forces.

The time seems appropriate to attempt to establish and evolve such an “Indian” school of thought. In the face of the overwhelming corporate investment already visible today, the consolidation of such a school will enable its survival in the long term. There may be a danger of the movement losing its appeal and being overwhelmed by corporate intrusions in the built environment, if adequate measures are not taken to maintain its survival at this time. Architects like Correa, Rewal, Doshi, Baker, Anant Raje now belong to an older generation who can be said to have established a strong base. A comparative study of the works of relatively younger architects with the intention of identifying commonalities could also yield valuable results.

Architect and educator Harwell Hamilton Harris has said, “A national expression . . . is, at its highest, the expression of consolidation. A nation is a people

consolidated. The purpose of a national architecture is to further unite people as citizens. Since the nation is essentially a symbol, a national architecture must provide an image of the qualities the nation symbolizes.”<sup>10</sup> Thus, before the anonymous forces of universalization threaten the identity of the people of India, a consolidation of this movement which has been in existence for several decades now, seems to be needed. The consolidation may help “unite” people in the sense that in the event of the advent of a faceless international corporate architecture, people will continue to possess an identity through their architecture, and an identity through architecture is of lasting value. As regards the “qualities” which a nation symbolizes, an architecture based upon the commonalities identified preceding pages, will be able to express among other things, a continuing ancient culture partaking of the “Age of Reason”, but above all, vital cultural identity in the context of a homogenous globalizing technological environment.

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<sup>10</sup> *Harwell Hamilton Harris: A Collection of His Writings and Buildings*. Student publication of the School of Design, North Carolina State University at Raleigh, Volume 14, Number 5, 1965, p 29.



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